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# MASSACHUSETTS HIGH TECHNOLOGY COUNCIL: AN ASSESSMENT OF ITS PUBIC POLICY AGENDA.

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# The Massachusetts High Technology Council: An Assessment of its Public Policy Agenda

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Introduction

Proposition 2½ passed by popular referendum in the fall of 1980. Though designed to reduce local taxes and spending, Proposition 2½ also bears upon the broader issue of economic development policy. The Massachusetts High Technology Council (MHTC) -- an industry association representing selected electronics and other research-and-development intensive firms -- was the principal financial sponsor, and the only major business group to support the proposition publicly. The MHTC backed the measure ostensibly to improve the state's "business climate" by making it easier to attract to Massachusetts the experienced electronics engineers and related senior professionals critical to their businesses.

The success of Proposition 2½'s proponents is due not so much to the popular outcry for lesser government as it is a result of business efforts to shape the role of state government, and of the legacy of structural economic problems. Frustrated by the persistance of inflation and inadequate employment opportunities, and confronted with public policy options constrained by the business community, the voters chose the only available alternative promising immediate relief.

With the recent deterioration of the manufacturing base, the industrial states of the "Frostbelt" have yielded to the "business climate" doctrine proferred by business as the economic development solution. Firms threaten to leave or expand employment elsewhere in order to extract concessions (for example, tax breaks or to deter progressive tax measures) from state and local government. In Massachusetts, a state long devatsted by the shift of the textile and show industries to the south and overseas, traditional manufacturing industries and the financial community succeeded in firmly establishing the primacy of the "business climate" doctrine during the early 1970s in the wake of a protracted economic downturn. In the late 1970s, the MHTC, as the representative of the burgeoning high tech electronics industries, presented a slightly altered version -- claiming that the high state and local tax burden on individuals in Massachusetts limited the ability of high tech firms to attract key personnel. Since they were reluctant to pay salary premiums in order to offset state taxes, MHTC firms sought to reduce the tax level and settled on Proposition 2½ as the best available vehicle to achieve that in 1980.

The tax fetish of the MHTC reflects a poor understanding of the relation between taxes and economic development. Economic growth results from a complex interaction and management of society's resources -- labor, technology, and capital. To operate as if taxes were the penultimate factor is to seriously misconstrue the social process which economic development represents.

While other states substituted taxes based on income or consumption for property taxes, Massachusetts repeatedly failed to lessen its dependence on an archaic, generally regressive property tax. As will be discussed below, in recent years business groups have effectively impeded efforts to make the overall tax system in Massachusetts less regressive. Property taxes increased and exacerbated the regressivity of the tax structure while business sought tax breaks for themselves. Granted, business interests are not solely responsible for the failure of tax reform in the state -- corruption in high places and ineffective political leadership are also at fault -- but the constraints that business has placed on the state in the name of the "business climate" have severely limited the range of options.

Structural economic problems — inflation, natural resource shortages, and high levels of underemployment if not unemployment — have operated to erode living standards and strained taxpayers' willingness to shoulder the burden of regressive taxation. It is evident that these developments and not a desire to reduce government services, are the root of the "tax revolt." Indeed, families with a falling standard of living do not seek to lower it further by shrinking the state-supported portion of it.

The MHTC and Citizens for Limited Taxation, the original proponents of Proposition 2½, were able to parley the frustration engendered by structural economic problems and a regressive tax structure into a signal victory. Yet it is questionable how well the measure actually serves the interests of the state's high tech industry. Are the problems confronting the industry, even the Council's much publicized concern with attracting key personnel, significantly relieved by reduced property taxes? This issue receives extensive treatment in this report.

The report proceeds as follows:

Sections I - III examines the "tax revolt" in light of the history of failed tax reform efforts, and reviews the development of the high tech electronics industry and its growing influence on public policy.

Section I discusses the development of high technology electronics in Massachusetts, initially fostered in the 1950s and 1960s by military and space contracts, and prospering in the late 1970s based on a commercial and military orientation. Attention is also focused on factors the labor market situation for professional and technical employees and the locational pattern of high tech firms.

Section II briefly reviews the formation of the Massachusetts High Technology Council and its public policy program in Massachusetts, particularly its focus on state and local tax reduction.

Section III examines the origins of the tax revolt in Massachusetts and looks at the roles of Citizens for Limited Taxation and the MHTC in capitalizing on the inequities produced in the state's tax system by the legacy of frustrated tax reform attempts.

Section IV, the final portion of the report, analyzes some of the peculiarities of the MHTC and its public policy agenda. This section should be of particular interest to readers concerned with the policy implications of the report's findings. These findings include:

(1) An examination of the limited support within the state's high tech industry for the MHTC's tax program; included is a critical look at inconsistencies between the public pronouncements of leading MHTC members and the actual practices of their firms. pp. 60-69

(2) A closer look at the fallacious "link between jobs and taxes" in view of the insufficient as well as potentially debilitating effects of Proposition 2½ on the development of the high tech industry. The following is documented:

(i) That the credibility of the "17 state average" tax analysis of the MHTC is unsupportable; pp. 73 - 76

(ii) That high tech firms could pay high premiums for senior engineering personnel while still maintaining a favorable profit position vis-a-vis competing high tech firms based outside of Massachusetts; pp. 77-84

(iii) That the estimated profit savings to high tech firms are relatively marginal; pp. 85-88

(iv) That Proposition 2½ operates in many ways to restrict the expansion of the high technology electronics industries of Massachusetts. pp. 89-90

A. Development of High Technology Electronics in Massachusetts

The term "high technology" has become synonymous with Massachusetts industry. It refers to businesses in which technological innovation and development plays a central role. Because of the potential for cost reductions or new markets resulting from innovation, and with the ease of entry in certain product lines, firms in these industries spend disproportionately more than firms in other industries on research and development, and hire more research and scientific and technical personnel in order to remain competitive.

Such industries are also based in electronics; these pursuits -- electronic computing equipment, communications equipment, electronic components, engineering and scientific instruments, measuring and controlling instruments, and optical instruments--are all significantly driven by developments in microelectronics technology, in the incorporation of electronics into their products, and in the use of electronics in design and production processes. Thus, when we speak of "high tech" industries in this report, we refer primarily to the electronics industries/sector.

The electronics industries have expanded considerably in Massachusetts in recent years, growing from 5 per cent (34,000) of manufacturing employment in 1947, to 22 percent (148,000) in 1980.[1] Using more encompassing definitions of "high tech," Technical Marketing Associates, in a

[1] However, the electronics industries represented only 5.4 percent of all industry employment employment in the state in 1980.

report to the State Executive Office of Economic Affairs, puts the high tech share of manufacturing at 26.1 percent in 1979, and according to the State Division of Employment Security's specification, roughly one-third of manufacturing jobs are in this sector.

The history of Massachusetts electronics is best understood in two stages: the initial development phase dominated by the influence of military spending, and the more recent, post-1971 stage of rapid expansion geared to commercial and industrial markets.

In the first period, from World War II up to the early 1970s, military spending was critical in two respects: (1) in subsidizing R&D efforts in the development of the electronic technology itself--efforts to miniaturize and make more reliable for military purposes electronic systems based initially on transistors and subsequently on integrated circuits; and (2) in the establishment of the electronics industries in Massachusetts and in the development in the Boston area of an engineering and scientific community with expertise in electronics. The Massachusetts Institute of Technology (and its affiliated research labs) served as the central institution in this process.

In attracting military and space R&D contracts and in training physicists, chemists, engineers, and computer specialists, M.I.T. has been instrumental in forging an extended agglomeration of technical expertise in electronics in the Boston metropolitan area.

One study in the late 1960's reported 250 technology-intensive firms had been established in the area either by former M.I.T. personnel or by the former employees of first generation "spin-offs."[1] Federal government support, particularly in the form of Department of Defense R&D contracts, helped spawn these small, innovative electronics firms, both as a source of initial capitalization and as a major customer. Military contracts for missile and missile defense systems, fire control mechanisms, computers, navigation systems, radar, and military communications effectively promoted the development of microelectronic technology and established eastern Massachusetts as one of the two or three main electronics centers in the U.S.

The key period in this process was that of the great missile build-up, from 1959 to 1965. The Indochina War, however, led to an increase in the production of conventional materiel and a stretch-out or deferment of some of the strategic military projects, including many of the missile and missile defense programs. This lessened somewhat Massachusetts' share of military contracts although the real value of contracts kept increasing through 1968. With the de-escalation of the Indochina War and national sentiment running against the Pentagon, the military's budget fell off sharply in real terms (declining by 29 percent from

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[1]Edward Roberts, "Entrepreneurship and Technology," Research Management, XI (July, 1968), p.

1969 to 1975.) In Massachusetts, the real value of prime contracts fell by 31 percent in just two years from 1968 to 1970.

With an estimated two-thirds of the professional and technical workforce in the Route 128-Cambridge area supported by government contracts, layoffs were widespread in the early 70's in the military-oriented electronics sector in Massachusetts. According to the New York Times Magazine, by late 1970, some twenty percent of the 50,000 engineers and scientists in the Route 128-Cambridge area were out of work. A trade journal estimated there were as many as 5,000 unemployed electronic engineers in greater Boston in 1971.

Whereas the electronics industries were primarily oriented to the military market up through the 1960's, in the 70's the bulk of the expansion has been in production for commercial and industrial markets. Most of the expansion in the 70's was by firms which had been started in Massachusetts by engineers and scientific personnel coming out of M.I.T. and other military-related work for private manufacturing or R&D firms. Very little employment growth in the past decade was generated by the expansion or branching operations of more established firms like General Electric, G.T.E., or Raytheon. Many newer electronics firms have become leaders in their fields: Digital and Data General in minicomputers; Wang in word processors; Analog Devices, GCA, Teradyne, and Genrad in semiconductors and semiconductor production and test equipment; and E.G.&G. and Foxboro in electronic instruments; and Computervision and Applicon in the Computer Aided Design, Computer Aided Manufactering ("CAD/CAM") field.

The shift from military to commercial and industrial orientation has altered the relative importance of industries within the Massachusetts electronics sector. Communication equipment (e.g. radar, navigation, and missile defense systems) was the largest electronics industry in the state during the early 1960s with over 40 percent of the sector's employment. The expansion of the 1970s, however, issued from the computer and electronic components industries. The Massachusetts computer industry produces minicomputers for industrial and office applications; computer peripheral devices which perform input, output, and memory storage functions in computer systems; and word processors. The electronic components industry in the state produces intermediate products, such as semiconductors, mainly for use in capital goods (particularly those produced by the rest of the electronics sector), but also, to a lesser extent, consumer products and military goods. These two industries--computers and electronic components--were responsible for nearly four-fifths of the employment growth in the Massachusetts electronics sector in the 70's.

Advances in microelectronic technology--in design, performance, application, and production technique--have reduced the price per function of electronic deveices by an estimated factor of a thousand since 1960. Initially spurred by massive doses of military spending, electronics has more and more been incorporated into machines to perform computational, record-keeping, and design, sensing, controlling,

and testing functions in office and manufacturing facilities.

The electronics capital goods sector has enjoyed expanding international markets as well as increased U.S. sales. Production for export, in fact, increased at an annual compound rate of one-fourth faster than the total U.S. production during the period, 1975-80; exports increased 22.5 percent per year while total domestic production increased at an annual rate of 18 percent. According to U.S. Department of Commerce data for 1980, nearly 27 percent of U.S, electronics production was for export while imports accounted for less than 16 percent of the apparent consumption of electronics products in the U.S.[1]

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[1]U.S. Department of Commerce, U.S. INdustrial Outlook, 1981, Washington, D.C.: U.S. Government Printing Office, 1981.

These expanding applications, together with a wider adoption of electronics-based products (here and abroad), fueled rapid growth in employment in the electronics sector in the 1970's, in the U.S. as a whole as well as in Massachusetts. For the U.S., employment in electronics increased by 36 percent from 1971 to 1979 while overall manufacturing employment increased by only 13 percent. Massachusetts has not only fully participated in this expansion but has managed to increase its share of all the major electronics industries in the 1970's. While the fall-off in military spending reduced Massachusetts' share of U.S. electronics employment from 7.6 percent in 1958 to 6.0 percent in 1971, the late 70's has seen the state's share rise to 7.8 percent by 1979. In the computer industry the state's share of total industry employment in the U.S. grew to 10.3 percent in 1979, and in electronic components to 8.5 percent.

The bulk of the 1970's expansion in Massachusetts was concentrated in the late 70's--from 1976 to 1979, electronics employment grew by 13 percent a year. For the major Massachusetts-based electronics companies (those with more than 1500 employees in the state) sales increased by 23-24 percent annually and net income grew by one-third each year from 1977 to 1979. By 1979, these firms were, on average, yielding somewhat over twenty percent return-on-equity--one-third higher than the fifteen percent for all U.S. manufacturing.

How was Massachusetts able to garner much of this growth in the late 70's? Two general reasons stand out. One is that M.I.T. and the brisk cold war military spending in the state established eastern

Massachusetts as a center for R&D work. This climate of innovation, coupled with an active venture capital community, fostered spin-off firms capable of competing in the dynamic, rapidly expanding electronics industries. Out of this process has emerged many of the fastest growing Massachusetts electronics firms—e.g., Digital, Data General, and Prime Computer.

The second reason for the late 70's growth in Massachusetts was that an available, relatively less expensive (than in other established electronics centers) labor supply at all skill levels permitted the highly profitable expansion. The labor requirements for electronics manufacturing include highly-trained electronic engineers, scientists and kindred workers who develop, design,and program the products on the one hand, and, on the other, relatively low-skilled assemblers, technicians, and other production workers who basically assemble and test the products.

The large professional workforce with expertise in electronics had been established during the halcyon days of cold war military spending in the 1950s and early 1960s; high unemployment among professionals in the wake of military cutbacks in the early 70s kept down salary levels. Although Massachusetts had been a high wage state in textiles, wages for production workers in most of the electronics industries have remained below national averages for those industries.[1] A declining overall manufacturing sector for the majority of

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[1] The exception is the communication equipment industry where unionization in the largest companies in Massachusetts (Western Electric and Raytheon) has kept Massachusetts wages at national levels.

the post-World War II years with a commensurate decline in manufacturing unionization in Massachusetts has combined with a paucity of alternative high wage employment to push factory wages down.

In the computer industry in 1977, hourly earnings for production workers in Massachusetts were ten percent below the national average and even further behind the hourly rates prevailing in the other major computer manufacturing states of California, New York, Pennsylvania, and Texas. In electronic components, hourly earnings in Massachusetts were about seven percent less than the average for the industry nationally, and again, even further behind the other major producing areas. Roughly the same is true for production wages in the measuring and controlling instruments industry.

The relatively low production worker wages in the computer industry in Massachusetts undoubtedly must be an important factor in accounting for the fact that from 1972-77 production employment increased fifty percent faster than salaried employment in Massachusetts, whereas for the nation in general, production jobs in computers expanded at roughly the same rate as salaried employment.

Although they grew dramatically in the late 1970s, electronics industries in both Massachusetts and the U.S. have been slowed down considerably by the current recession. Historically high real interest rates, uncertain national economic policies, a relatively strengthened U.S. dollar, and the recession in Western Europe -- a major market for

Massachusetts firms which sell from 20 to 40 percent of their output abroad, mostly in Western Europe--have slowed considerably capital goods orders.

For those firms whose sales have continued to increase, albeit at slower rates than in the previous three or four years, productivity increases (made possible through production experience with new products) allow greater production without necessarily expanding employment. Firms with relatively stagnant sales have hesitated to furlough valued employees for fear that they will be grabbed up by other firms and hinder their ability to reppond quickly when market conditions improve. Frequent reference has been made in the trade literature to the lesson learned during the recovery from the mid--70's recession when American semiconductor manufacturers who had laid off experienced personnel saw the Japanese capture forty percent of the domestic market for the then state-of-the-art 16-K computer memories. Many U.S. electronics firms, including some in Massachusetts, have implemented measures such as four-day weeks, shorter days, and early vacations along with hiring freezes to avoid layoffs. At least one Massachusetts firm, Analog Devices, has instituted a six-month pay freeze and has cancelled performance bonuses for key professional workers in exchange for no layoffs.[1] Not surprisingly, layoffs in Massachusetts have been relatively minor (less than one percent of employment) as of late summer 1981.

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[1] "The Economic Pinch is Leaving a Bruise," Boston Globe, Aug. 25, 1981.

B. The Growing Political Leverage Exercised by Electronics Groups

The growing importance of the electronics sector has greatly enhanced its potential political leverage in recent years. Besides their rapid employment growth and military importance, electronics industries are also economically significant for reasons of international trade, inflation, and productivity. In 1980, for example, the U.S. has a $10 billion trade surplus in electronics products; the per-function price of electronic devices continues to decline at a steady pace; and the expanded use of electronics-based products promises to increase labor productivity in offices and factories.

On a national level, electronics industry associations have traditionally sought ways to reduce their corporate federal income taxes. Only recently, however, have they been successful in getting special tax provisions. Although the Reagan administration's initial accelerated depreciation program was devoid of any targeted stimulus for electronics, representatives of the five major nationally-oriented industry groups[1] raised the specter of intensifying Japanese competition and emphasized the need to foster continued national technological superiority by encouraging increased investment in R&D (largely a labor cost) as well as stimulating investment in plant and equipment. The final tax bill, signed into law in August 1981, contained provisions

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[1]Electronics Industries Association, American Electronics Association, Semiconductor Industry Association, Scientific Apparatus Makers Association, and the Computer and Business Equipment Manufacturers Association.

for; improved tax credits for increased investment in R&D; a change in the Internal Revenue Service code allowing credits based on all R&D performed in the U.S. rather than on an amount proportional to domestic sales only; and to allow credits for equipment grants to colleges and universities at market price rather than manufacturer's cost.

Regarding political leverage at the state level, manufacturers in general have benefited from a political "learning curve." As the cumulative experience in attempting to influence state policies has grown (symbolized by the attention given to "the business climate"), the returns to business have increased. Business interests emphasize their locational mobility -- either their ability to relocate or the ease of expanding elsewhere--in order to elicit the desired policy changes. It is certainly evident that the more this has been done over the past decade, the more state policies have been adapted to respond directly to business requests. The activities of the Massachusetts High Technology Council, largely representing electronics companies, are clearly an extension of this approach. Before discussing the Council's political agenda in Massachusetts in Part II, some aspects of the competitive environment facing electronics companies, and of the critical engineering personnel situation, will be reviewed, and factors which influence plant location in these industries will be examined.

## The Competitive Environment

The entire electronics sector is extremely competitive. Market shares are not protected by past oligopolistic experience; advances in microelectronics periodically revolutionize product markets and design and production techniques. Firms compete not only in terms of price but also on the basis of product performance (design, reliability, upgradeability) and customer service. Firms must have the R&D capability to adapt to quickly changing product competition and access to the capital necessary to set up production lines to supply developing markets. In electronics, from 6-12 percent of net sales is devoted to R&D (compared to about 3 percent for all manufacturing.)

A highly-skilled, scientifically-trained workforce of engineers, physical scientists, and computer specialists is vital to these firms. While a reservoir of this talent in the Boston area contributed significantly to the late 70's expansion in electronics, firms here as well as in other parts of the country have been hampered in recent years by a shortage of sufficiently skilled and/or experienced technical professional workers.

## The Availability of Technical and Professional Personnel

The supply of engineers and scientists was affected by the decline in the relative importance of military spending in the early 70's; this forced a reorientation of both engineering and graduate schools and many electronics firms away from dependence

on military-related programs. But the shift was not smoothly effected in academia or industry. Engineering enrollments peaked in 1969, and total engineering degrees conferred did not reach their 1971-73 levels again until 1978; degrees conferred in electrical engineering took even longer to recover. Roughly similar patterns are evident for enrollments and degrees granted in the physical sciences. Only in computer and information science has the flow of graduates steadily increased throughout the 1970s.

Similarly, the demand picture for scientific and technical workers has fluctuated considerably over the course of the last decade. In 1971, the unemployment rate for engineers reached its highest level since the beginning of the missile age. Although many engineers unemployed in the early 1970s were reabsorbed in electronics during the late 1970s expansion, a significant group of over-40 engineers was not; there were insufficient programs in either industry or academia to adapt their skills to the new requirements imposed by the changes in microelectronics technology. Following this generally slack employment situation from 1970-76, the roller coaster of professional and technical employment shot upward in the next three years. In the computer industry, e.g., the employment of professional and technical workers increased at an average annual compound rate of 23.4 percent from 1976-79. Since then, however, this growth rate has fallen considerably.

The supply of entry level engineers (new graduates) has begun to respond to the increased demand.[1] The widespread attention given to the shortage of engineers stems primarily from the number of unfilled positions for experienced engineers. To incorporate the latest innovations into existing products and to develop new ones as quickly as possible, electronics firms seek out senior level engineers and other experienced professionals. Special in-house programs to upgrade entry level personnel require time and money. According to a recent survey of High Tech Council member firms, for fifty percent of the new technical professional hires they planned for 1981, the preferred background included three or more years of direct industry experience.[2]

To hire experienced engineers a firm must attract candidates away from other firms. In the geographical areas with large concentrations of experienced scientific and technical personnel such as the Boston area or the Silicon Valley area around San Jose, California--it is easier to "pirate" an engineer away from

[1] For example, in Massachusetts there was a 17 percent increase in the number of engineers and computer scientists graduated in 1979 over the previous year. (This was, incidentally, a greater percentage increase than in any other state). "Businessmen Give Colleges Low Marks," Boston Globe, Dec. 17, 1980

[2] Coopers and Lybrand, "Results of Survey on Human Resource Needs," Massachusetts High Technology Council, January, 1981, p. 11. See also, Vinson, Franchi, and Baigelman, "A Report on Seven Growth Occupations in Massachusetts: Findings from a Statewide Employer Survey," Policy and Evaluation Division, Massachusetts Department of Manpower Development, April, 1981.

another area firm than it is to entice one to relocate from another part of the country. In the latter case, significant salary premiums often are required.[2] Possibly more important than substantial salary boosts, however, is the opportunity to be in the technological forefront of the industry. Personal mobility and continued employability is optimized by working on state-of-the-art projects in an innovative climate. The company which appears to be technologically lagging is tainted in the eyes of the potential job-hoppers. Small firms may be hampered by both an inability to afford high salaries and by the uncertainty of its technological commitment. On the other hand, larger firms may have a reputation for bureaucratic ossification which stifles individual initiative, or they may require a high degree of specialization which would undermine a professional's future adaptability.[3]

This tight labor market for electronics employees has contributed to unusually high turnover rates.

According to the American Electronics Association, thirty percent of high technology workers nationwide changed jobs in 1978. (Compared to four or five percent separation rates for manufacturing in general.) Smaller companies have experienced particularly high turnover, with the turnover rate for firms with under 500 employees

[2] See, for example, "Companies Compete to Lure Employees," New York Times, April, 30, 1980

[3] Tracy Kidder's recent book, The Soul of a New Machine, provides a remarkable account of how a group of engineers designed a sophisticated minicomputer for Data General in an unussually short period of time (less than two years.) Data General was able to attract some of the best recent graduates by offering them the opportunity to work on a leading-edge project. The company then managed to push a hyper-intensified work pace, without paying overtime, to complete the design in record time. Tracy Kidder, The Soul of a New Machine, Boston: Little, Brown and Company, 1981.

at more than fifty percent on an annual basis.[1] In Massachusetts, it has been reported that 18,000 engineers switched companies in 1979.[2]

Factors Affecting Plant Location

While it is essential for firms to be able to attract and hold experienced technical professionals in order to keep their products competitive, this is not the sole factor in plant location decisions. Other considerations, such as the stage of the product cycle, geographic diversification, or access to foreign markets may be significant in the branching decisions of established firms.

Since electronics industries are labor-intensive[3] and their material inputs and product outputs have high value-to-weight ratios, they are heavily influenced by the availability of appropriately-skilled labor supplies in determining plant location; Production facilities do not have to be near raw material supplies or near markets, except when tariff, quota, or other considerations affect access to foreign markets. If they do utilize expensive machinery, such as elaborate printed circuit board testing equipment, it is frequently based on electronics itself and therefore light in weight and relatively easy to move.

Electronics firms depend on two distinct categories of labor: (1) a highly skilled, scientifically-trained professional

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[1] "Companies Compete to Lure Employees," New York Times, April 30,1980.

[2] "Engineers Take a Look at Their Own Profession," Boston Globe, May 14, 1980.

[3] That is, they have a lower asset-to-employee ratio and a higher labor compensation-to-sales ratio than the average for all manufacturing.

workforce of engineers, scientists, and computer specialists; and (2) a moderately- and low-skilled workforce engaged in either production operations (assembly or testing) or clerical functions. Roughly sixty percent of a typical electronics firm's workforce is included in this latter category.[1]

As the product cycle matures for any given product, actual production less and less requires the input of the professional workforce. That is, the professional workforce is primarily engaged in performing the R&D work necessary for new product development, design, programming, prototype construction, product refinement, and production engineering. If the product is successful and production is expanded appreciably many fewer professional workers are necessary when the need arises for marginal refinements in design or production engineering. While location near concentrations of a professional workforce with expertise in electronics is important for the early stages of the product cycle, when the mass production stage is reached, the location of actual production is no longer tied to the electronics

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[1]Occupational Structure for Average Electronics Firm according to TMA:

| Occupation | Percent of Workforce |
|---|---|
| Management | 5 % |
| Senior Engineer/Comp. Spec. | 8 |
| Junior Engineer/Comp. Spec./ other Professional | 17 |
| Technician | 10 |
| Clerical | 15 |
| Production Workers | 45 |

Source: Technical Marketing Associates, Inc. High Technology Enterprise in Massachusetts: Its Role and Concerns. Prepared for the Massachusetts Executive Office of Economic Affairs, October, 1979, p. 60.

R&D centers and can be shifted to take advantage of lower production labor costs.

Frequently, as firms grow and enter the five-to-ten thousand employment range, they pursue a strategy of geographic diversification when it comes to branch plant location decisions. In order to avoid dependence on a single regional workforce or political jurisdiction, firms spread their branch plants in different regions. A version of this pattern is the establishment of parallel (or "second-source") production plants -- plants which produce the same product(s) but are located in different parts of the country or world. The purpose is to minimize risk, for in the event of labor militance or other disruptions of production, the firm could simply increase production at its unaffected, parallel plant.

Since electronic products are high in value relative to weight, proximity to market is only a consideration when foreign tariff or quota levels, or ingrained business customs, impede exporting from the U.S. For tariff and quota reasons, along with sizeable income tax advantages, many U.S. computer and semiconductor producers have established production operations in Ireland and Scotland, locations from which they can ship to the European Economic Community countries.

Nearness to market is also a factor in supplying certain parts of the Japanese market. For instance, some U.S. semiconductor equipment manufacturers have established wholly-owned subsidiaries and joint ventures in Japan in order to maintain close technical

contact with semiconductor manufacturers there.[1] (Some expansion in customer service operations typically occurs away from corporate headquarters to facilitate customer training, maintenance, and repair services in major market areas. However, these operations are usually not that significant in employment terms.)

These patterns of location dynamics are perhaps applicable only to the branch plant location decisions of established firms. Smaller, newer firms, with less than 1500 or 2000 employees, probably do not consider locations very distant from their initial base of operations. The coordination problems which result from branch locations usually function to keep the operations of smaller firms closer together. Larger firms, however, are able to consider a broader scope of potential sites. Largely due to advances in microelectronic technology and its application in developing enhanced corporate communications and production control and coordination systems, branching decisions for mass production facilities are continually becoming more flexible across the entire spectrum of firm size.

Summary

Faced with an insufficient supply of experienced engineers and other technical professionals, and desiring to enhance their command over financial resources, electronics companies have capitalized on their rapid growth, economic significance, and ease of mobility in seeking special political considerations from

[1] "U.S. IC Gear Makers Build in Japan," Electronics, July 14, 1981, p. 89

state and federal government. The primary concern here is the influence electronics firms wield in the state arena. The shortage of senior, experienced

technical professionals is real--in no small part a legacy of an earlier dependence on military-related research and production programs. However, there is an inclination on the part of some electronics firms to take advantage of the dependence of the public sector on the private in order to reorient state policies to address what is, most likely, a temporary problem and which is, perhaps, better addressed by the concerted action of the iddustry itself. As pointed out, the lever which has been used to influence state policy -- the expansion of employment outside of the state--may in fact be shaped by considerations other than that which is publicly emphasized, the shortage of experienced engineers.

## II. The Massachusetts High Technology Council: Its History and Political Agenda, 1977-1980

The Massachusetts High Technology Council (MHTC) formed in 1977 with 38 companies, predominantly electronics and related research and development firms. The ostensible purpose of the organization since its formation has been to promote the industry's concerns in the area of public policy in Massachusetts.

By 1979, the MHTC had developed a commanding presence on the Massachusetts political scene. The council's efforts had an impact on every area of politics and education in the Commonwealth:

> it was a major political and financial supporter of Governor King's successful 1978 election campaign; its lobby had become a highly visible and respected force in the state house; and it had established garrisons in every element of the state's educational and vocational system. In all the council's doings, it sported its political agenda as "people-oriented -- a campaign which would lead to more jobs and a healthy economy to the benefit of the entire state.

With the election of Governor King, the council carried its campaign to a higher level. In a much publicized event in February of 1979, the MHTC announced the signing of an informal "Social Contract" with the King Administration. King promised to lower taxes to a level comparable to that of "fellow workers in competing states." In return, the council promised King and the citizens of the state an economic growth package including 60,000 new jobs, an increase of $2 billion in personal income, and $300 million in new tax revenues generated from an expanded tax base.

One year later, King's attempt to cap local property tax rates

at 4 percent was being undermined by localities invoking an override provision. (It is worth noting, however, that the total property tax payments in the state declined by 1% from FY 79 to FY 80, while Massachsetts dropped from 11.5% above the national average to only 7.3% above in state and local taxes as a percentage of personal income. Even so, the MHTC wanted more.)[1]

The council initiated other efforts directed at eliminating the 7.5% surtax on personal income taxes and at receiving special tax breaks for high tech firms.[2] These attempts floundered in legislative committee. In the face of such slow progress, the MHTC announced midway through the Proposition 2½ campaign that it was breaking ranks with the business and political leadership of the state in lending its support to the measure -- both financial and political -- and the council played a key role in the referendum's eventual success.

How was an industry association able to establish such political clout in such a short time? Furthermore, what has the MHTC been after? To understand these developments, a review of the history of the organization is in order.

Founded in the fall of 1977, the council dedicated itself to improving a "deteriorating business climate." The crux of the problem, in its view, was high taxes:

> While state and local taxes are a problem, Stata (chairman of the board of Analog Devices Inc., and president of MHTC) says it would be too costly and disruptive to move outside of

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[1] "Taxachusetts a Misnomer?", Boston Globe, Feb. 15, 1981

[2] "Hi-Tech Companies Impatient for Tax Relief," Boston Globe, Mar. 3, 1980

> the state. So the firm will expand within the state and combat the problem through such groups as the newly organized MHTC.[2]

In order to resolve this "problem," the MHTC sought to capitalize on the rapid growth of its member firms in a region desperate for manufacturing jobs, using the offer of prosperity as its bargaining chip. Edson deCastro, perhaps the most influential executive on the council, stated in the early months of the MHTC's existence:

> We have to make the general population so aware of the problems of high technology companies that the legislature will have to respond or be voted out of office ... We've got to show how people's jobs and livelihood depend on high technology companies.[3]

In its brochures and public pronouncements, the MHTC has depicted itself as an association of "people-oriented" firms -- the creators of a revived Massachusetts economy and suppliers of a wealth of new and exciting careers. By its own admission, the council's support for tax reduction has focused mainly on personal, rather than business, taxes. Drawing on the supply side view then coming into vogue, the MHTC's vision was one in which once taxes are cut and public spending is reduced, growth will be stimulated and then revenues will be available to fund social programs.[4]

At the heart of the MHTC's "people" approach to public relations is their member firms' own "people" problems. As we have noted, such firms faced a shortage of senior engineers in the late 1970s, and this problem is especially acute for small and medium-sized operations. Thus, sensing their growing political powere

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[2] "Executives' Concerns: Japanese Competition, Government Policies," Electronics, Dec. 22, 1977, p.81

[3] "Massachusetts Firms Strive for Change," Electronics, Jan. 5, 1978, p. 113.

the council has sought to portray the high state and local tax burden in Massachusetts as the principal obstacle to attracting needed engineers. Cutting Massachusetts' personal tax burden, in their view, was the obvious public policy solution. The MHTC identified a 17 state group of "competing industrial states" -- determining that the average state and local tax burden as a percentage of personal income was 15.7%, compared to Massachusetts with 17.6 percent (in 1977). The MHTC's highest priority to date, and the key item in the Social Contract, has been to bring the state down to that average.

A secondary concern of the council has been what it perceives as the inability of the state's educational institutions to meet the high technology industry's manpower needs. It has sought reforms in both the public and the private sector which would rectify what they term as a "skills mix" problem. Although many of these efforts have been made with colleges and universities in the private sector, the MHTC has pushed for the reorganization of public higher education as the foundation of any solution to the industry's manpower problem.

One the one hand, the council has made it imperative that the "tax problem" be addressed. Toward this end, it has made the "17 state average" a shopworn phrase in the State House and in public discussions of economic development and fiscal policy. The council has supported a number of tax bills: one ( which was approved in a state constitutional convention in September 1980) would tie the state's level of taxation to the 17 state average; another (enacted into law in 1978) would cut the state capital

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[4]Progress Report 1980, MHTC, p.17

gains tax by 60%; still another would give tax breaks to firms for R & D investments; and finally, the council supported a measure tailored to firms that provide personnel and equipment to training programs in high technology occupations. Leaders of the high tech industry, reminding the state of the high level of geographic mobility among firms in their industry, have bluntly (if not altogether frankly) stated that they would be forced to expand their operations elsewhere if the tax burden was not reduced (as well as "urging" that the appropriate budget cutting accompany tax reduction so as to ensure fiscal responsibility).

While the high tech industry has sought a reduction in the size of the public sector, industry leaders have not hesitated to seek new state programs of benefit to their industry.

Through the efforts of Digital Equipment Corp. and with the encouragement of the MHTC, the state college system was reorganized in the late 1970s. Under the umbrella of the "Dover Project" (officially entitled the "Commonwealth Center for High Technology Education"), based in a new high tech training and administration institution in Dover, Ma., the mission of the state colleges was redefined in favor of turning out large numbers of computer programmers. In the summer of 1979, two years after the Dover Project began, the system's Board of Trustees voted to make "computer literacy" a requirement for graduation; and, in the fall of 1979, half of the ten state colleges began new computer science departments. In the mid-1980 reorganization of public higher education, the chief executive of a large insurance company, well-known as a supporter of the high tech industry's agenda in education, was named head of the new statewide Board of Regents. Three prominent members of the MHTC were also named to

the fifteen member board. The MHTC also prepared a 28 week course "for use by Massachusetts community colleges, high schools, and CETA programs" to train electronic technicians.[1] King's Secretary for Economic Affairs, former head of Alpha Industries and former member of the MHTC, George Kariotis, has oriented the training programs of the Department of Manpower Development to the needs of high tech firms. One Kariotis project, the Bay State Skills Commission, was designed to specifically enhance this goal; the commission, which is funded for $3 million in FY 1982, runs a variety of manpower programs chiefly in high technology occupations (ranging from assemblers to senior engineers). Some observers report that the percent of manpower funding in the state going to high tech related programs is as high as 90 percent.

Its claims notwithstanding, the demands of the MHTC have been slanted towards it own interests. The council has used its growing political power to extract significant concessions from the public sector. Some of these concessions have served only to benefit the firms within the industry, aiding their profitibility and competitive stance vis-a-vis firms in other states at the expense of the state's taxpayers and at the expense of other functions of state and local government.

In the case of Prop. 2½, however, it is not clear whether the measure, which is having a devastating impact on local governments and the state, will at all materially benefit high tech firms (in terms of enhancing their ability to attract key personnel or their profitability.) Anxious to see the state

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[1] MHTC, Progress Report 1980, p. 13.

respond to its demands, the Council pursued Prop. 2½ with wreckless disregard for its immediate and longterm effects.

In short, they have asked the state of Massachusetts to orient its tax policies and public programs to the interests of the high tech industry, and the high tech industry alone. While Proposition 2½ is the single most important victory for the MHTC, it is obvious that their role in the 1980 referenda is only the tip of an ice berg.

## III. Proposition 2½ and the Origins of the Tax Revolt in Massachusetts

With the passage of Proposition 2½, 1980 became the year of the tax revolt in Massachusetts. Led by a New Right "grass-roots" organization called Citizens for Limited Taxation (CLT), voters passed (by a 59% to 41% margin) a radical tax cutting referendum limiting the property tax rate to 2½ percent of assessed value—constituting a reduction by roughly one-half of what the state's 351 cities and towns were previously collecting. Proponents of 2½ acclaimed the vote as an attack on big government, a second "Boston Tea Party" as it were. In fact, expanding state-mandated programs, the absence of significant tax reform to lessen the dependence on the property tax, and insufficient state aid had forced local governments to push the state's overall property tax rate to more than 70% above the national average. But rather than being a popular and conservative attack on a growing public sector, as some have maintained, the evidence suggests a more complex matrix of political and economic factors behind the passage of Proposition 2½.

Contemporary analysts of the tax revolt (such as Robert Kuttner) have regarded the regressivity of state and local tax structures as the chief source of popular support for these measures.[1] Property taxes are among the most regressive and have been an obvious target for tax cutting campaigns. But the taxation picture is more complex than the "tax revolter" suggest.

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[1] Robert Kuttner, Revolt of the Haves, Simon and Schuster, New York, 1980

The anti-government view of the New Right is belied, at least somewhat, by the fact that the percentage of GNP going to the public sector has remained relatively constant over the last twenty years. Government spending reached its peak during the Vietnam era and has in fact declined somewhat during the late 1970s. On the revenue side, however, events have been more dynamic. Over the last decade, the incidence of taxation (who carries the burden) shifted from business to individuals, and from the well-to-do taxpayer to those of moderate and low income.

Table 1: Relative Share of Corporate and Personal Income Taxes, Federal and State Levels, 1959,1969,1978.

| | % 1959 | % 1969 | % 1978 |
|---|---|---|---|
| Federal | 100 | 100 | 100 |
| Personal | 68 | 71 | 75 |
| Corporate | 32 | 29 | 25 |
| State and Local | 100 | 100 | 100 |
| Personal | 61 | 70 | 73 |
| Corporate | 39 | 30 | 27 |

Source: David Kelston and Robert Kuttner, "The Shifting Property Tax Burden: The Untold Cause of the Tax Revolt," Conference on State and Local Alternatives, Public Policy Report #2, 1979

While the level of government expenditure reached its present dimension some ten years ago, the issue of ever increasing tax levels for low and middle income taxpayers has only surfaced in recent years.

Other significant factors have come into play. Changes in

the tax burden have developed concurrent with the stagflation malaise of the 1970s. During a time when inflation has eroded real incomes, and unemployment has been a recurring threat, continued tax increases have attracted the wrath of the middle American. Additionally, major expenditure priorities for the public sector during the past fifteen years -- e.g., the military and human services -- have focused on goods and services not consumed in a tangible way by the average taxpayer. Finally, for a variety of social and economic reasons, business groups and New Right organizations have become increasingly aggressive in seeking an overall reduction in the size and role of the public sector.

These are the circumstances of the popular revolt against taxes in the late 1970s. The growing regressivity of the tax structure, the growth of "pocketbook frustrations," and the increasing perception that higher taxes do not translate into higher levels of public services -- all have contributed to the recent political trend. The form taken in this revolt is the result of two factors. While a consumer cannot go to the polling booth to vote for lower gas prices or cheaper mortgages, he or she can vote for lower taxes. Also, conservative groups, ideologues, and business organizations have effectively articulated these popular frustrations in a series of tax-cutting proposals. These proposals have targeted highly visible, regressive taxes; on the other hand, they have avoided the issue of regressivity itself. Finally, the popular support for these measures has emboldened business groups and their legislative friends to reduce other taxes, especially those on business.

The climate which has fostered the growth of the tax revolt at the state and local level has also contributed to the resurgance of the Right and to the recent election of Ronald Reagan, the most conservative President in over five decades. Two patterns can be discerned here. First, the importance of working at the local level, the basic principle of groups which h ve organized the tax revolt, was essential to the efforts of the many right wing groups who worked for the 1980 Republican election campaign. By establishing organizations that have the semblance of "grassroots" support, the Right was effectively able to dominate the recent direction of the Republican Party.

Secondly, the wizardry and popular appeal of supply side economics was a well established part of the program of tax revolt organizations before Reagan made this the mantlepiece of his economic program. The heart of the supply-side argument is that high taxes restrain economic incentives and fund government inefficiency. Lowering taxes, in this view, will not, in the short or long run, affect the level of public services. This argument, whether cloaked in form of economic doctrine or in the form of sloganeering behind local tax-cutting referenda, has been popular precisely because it is the only proposal for socio-economic improvement on the political horizon which offers a ray of hope. It also has the advantage of not asking citizens to "sacrifice" their economic well-being, as was the case with the Carter Administration's rhetoric.

The nature of the tax revolt at the state level has reflected the political and fiscal pecularities of different states.

California's tax structure, for example, is more progressive and efficient than is true in Massachusetts. Changes in California's assessment practices, (which previously had favored homeowners ) in the late 1960s, together with rampant inflation in housing prices in the 1970s, produced onerous increases in property taxes paid by middle and upper-middle income homeowners. The failure of Governor Jerry Brown and the California state legislature to redress the situation led to the passage of Proposition 13.

A similar tax-cutting measure directed at the state's progressive income tax was turned down by a 2 to 1 margin only a year after Proposition 13. Opponents of this measure argued effectively on behalf of what was generally considered a fair and reasonable tax. This plus the fact that the income tax had grown more moderately led to the measure's defeat . In states, such as Minnesota, where tax reforms (such as circuitbreakers) were implemented earlier in the decade, tax cutting proposals met quiet and ignominious defeats.[1]

In Massachusetts, the genesis of the tax revolt is found in the extremely lopsided and significantly regressive revenue structure which had emerged since 1950.[2] The principal source of local revenue is the property tax -- constituting over 60% of local funding. The dependence on the property tax reflects the undiversified character of the revenue base, with Massachusetts localities underutilizing less regressive sources such as state aid and local fees. At the state level, the revenue structure is heavily dependent on a flat income tax. (Of 37 states which utilize the income tax, Massachusetts is but

[1] "Circuitbreakers" provide automatic rebates on rising local property taxes through special deductions in state income tax laws.

[2] See Tables 2-3 on next page.

Table 2: The Massachusetts Fiscal System: Basic Features.

State and Local Tax Structure: Comparison of Massachusetts and U.S., 1978

| | Mass. | U.S. Average | Ratio Mass./U.S. |
|---|---|---|---|
| Property Tax | 40.9% | 26.9% | 1.52 |
| General Sales Tax | 7.1 | 17.0 | .42 |
| Income Tax | 25.0 | 17.8 | 1.40 |
| All Other Taxes | 13.1 | 16.9 | .78 |
| Charges and Misc. Revenue | 13.9 | 21.4 | .65 |
| Total | 100.0 | 100.0 | |

*Excludes Capital Outlay, Education, Libraries, Health and Hospitals, Transportation, Police, Corrections, Sewerage, Housing, Parks, Government Administation, and Other Insurance payments.

Sources: compiled from ACIR, "Significant Features...." p. 53

Table 3: State and Local Taxes on Business by Tax, 1976-77, for Massachusetts (amounts in millions of dollars).

| Tax | Amount | Percent of total state and local business tax |
|---|---|---|
| Total taxes on business | 1,367 | 100.0% |
| Corporate net income | 397 | 29.0 |
| Real and personal property tax on business | 590 | 43.2 |
| Business portion of general sales and gross receipts | 66 | 4.8 |
| Insurance taxes | 96 | 7.0 |
| Occupational and business license | 20 | 1.5 |
| Miscellaneous business taxes | 198 | 14.5 |

Source: ACIR, op.cit., p. 69.

one of eight that do not employ progressive rates; when considered in conjunction with federal income taxes (which provide deductions for state income taxes -- therefore reducing the effective "cost" of paying one's state income tax) the net effect of the state income tax in Massachusetts is regressive). On the other hand, the business share of taxes in Massachusetts, which has been under the national average since at least the late 1940s, has declined dramatically over the past two decades[1]; state legislators, for reasons discussed later in this section, have been either unwilling or unable to consider increased business taxes as a means of redressing these inequities.

Since the mid-1960s, the property tax per capita has almost tripled in Massachusetts. A sales tax was imposed and later increased. The flat income tax rate was more than doubled. Increases in state expenditures and the growth of corporate tax breaks have accompanied the continued increases in sales, income, and property taxes. The political and fiscal history behind tese trends bear importantly on the circumstances which led to Proposition 2½.

Sales Tax and Graduated Income Tax Campaigns: The Historical Background

The growing regressivity of the state's tax structure can be attributed to the lobbying and political efforts by well-financed business organizations in the Commonwealth. The key to understanding the political campaigns around tax proposals in the legislature and on the state ballot, as one observer put it, is that "the name of the grad tax referenda has been MONEY." Business groups have consistently outspent their opposition by massive proportions. This money has been used to advertise and promote the view that

[1] See Table 5

support for progressive tax reform and opposition to the sales tax would only lead to unchecked increases in government spending, to increased taxes, and to a "deteriorated business climate."[1]

Tax issues have lined up two groups of organizations and interests in the past three decades. On the business side, the two enduring organizations have been the Associated Industries of Massachusetts (AIM -- representing most manufacturing firms in the state) and the Massachusetts Taxpayers Foundation (MTF -- representing the largest banks and insurance corporations). Also, a number of more conservative, independent, and "grassroots" groups have existed at different points in time, such as Citizens Against the Blank Check Tax, the Committee for Jobs and Government Economy, and CLT. These [illegible] groups were organized by conservative businessmen, such as Edward F. King ( who headed the latter two organizations), and [illegible] have effectively garnered the financial muscle of the business community. Opposing the business/conservative camp has the "progressive" group, including organized labor, liberal politicians of both major parties, progressive activists, and numerous moderate and liberal civic groups, such as Americans for Democratic Actiona, the League of Women Voters, and (more recently) Massachusetts Fair Share.

Much of the business community had supported a sales tax by the mid-1950s. In a series of meetings at Boston College known as the "BC Seminars," the proposal emerged for a sales tax to be used to provide property tax relief (the property tax is the largest component of state and local business taxes in Massachusetts)[2] and to improve the business climate.

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[1] It is worth noting that the Associated Industries of Massachusetts has employed the "business climate" argument in opposing such reforms as the abolition of child labor, the imposition of unemployment compensation, the development of the welfare system, and more more recently the growth of new state taxes.

2 See Table 3

While not ultimately passed until 1966, the sales tax became the mantlepiece of AIM's and especially MTF's agenda for tax reform. The sales tax was essentially an alternative to a graduated income tax, offered as a means for bringing property tax relief to the citizens of the state. Meanwhile, these same groups effectively defeated attempts to pass a Graduated Income Tax in the Massachusetts legislature. In 1962, through the ardent efforts of the state labor council, a Graduated Income Tax (GIT) referendum was placed on the ballot. With the AIM/MTF forces putting together a $300,000 war chest, the proponents were faced with a large and well financed opposition. Voters were convinced that the move was an attempt by labor and by state legislators to increase taxes, and the measure went down to defeat by a 5 to 1 margin.

In 1966, the MTF was able to orchestrate an effective lobby that pushed a sales tax through the legislature. The sales tax -- a limited 3% tax with exemptions for meals and clothing -- was sold on the basis of the "concept" which had originated a decade previous, that is, as a means for property tax relief. Organized labor immediately tried to get an override referendum placed on the ballot, but this was ill-conceived considering the political climate. And, being portrayed as an essentially negative campaign (that is, opposed to property tax relief), mustered very little support.

The legislature again put a GIT proposal on the ballot in 1968. Organized labor and other progressive forces did not mount a significant campaign. Still smarting from the sales tax battle, labor was embroiled at the time in fighting a legislative campaign to deny striking workers public benefits.

Meanwhile, although AIM and MTF did not take the lead in opposing the GIT, a small, well-financed, and sophisticated group called Citizens Fighting the "Blank Check" Tax waged a successful repeat of the 1962 campaign. The GIT again went down to defeat, although by a narrower margin (a 2 to 1 margin this time).

The key battle fought over the GIT came in 1972. A broad and energetic coalition came together in support of the measure -- including then-Governor Francis Sargent, liberal and moderate civic groups, organized labor, teacher and elderly groups, and a number of major politicians from both parties. Early public opinion polls demonstrated broad support for the measure. The pro-GIT forces, called the Coalition for Tax Reform, moved early to pass a law stymying the legality of corporate contributions to referendum campaigns. This move threw such a scare into the business community that four major companies -- John Hancock Mutual Life, First National Bank of Boston, New England Merchants Bank of Boston, and Wyman-Gordon Co. -- brought suit (these four firms spent over $33,000 in legal fees) and the conservative Supreme Judicial Court quickly struck dow the law.

Funding on the business side, organized by the Committee for Jobs and Government Economy (directed by Edward F. King), totaled $120,000 compared to $21,000 raised by the Coalition for Tax Reform. Corporate contributions to the Committee totaled $90,000, with the companies involved in the above mentioned legal suit pitching in a total of $12,000.

The Coalition for Tax Reform pushed the GIT proposal on its merits as a fair tax measure, and relied on the support of state-wide organizations and political figures. On the other hand, the

Committee for Jobs and Government Economy claimed that the measure was a "blank check" for increased government spending and taxes. The Committee's propaganda included a table based upon questionable assumptions. It showed taxes increasing for citizens at all income levels under the proposed GIT, omitted income levels above $15,000, and indicated that taxes would increase by over $300 million. One group of observers, including a respected public finance economist, flatly called the table a "masterpiece of statistical lying."[1] In the end, the usual scenario replayed itself, and the anti-GIT campaign prevailed. Polls shifted around during September and early October, and on election day the referendum was defeated by a 2 to 1 margin.

A 1976 GIT referendum went the same route. That year, progressive forces, led by Massachusetts Fair Share, managed to place a number of referenda on the ballot designed to equalize the tax burden, create a public power authority, and end the practice of large businesses getting breaks on their electric rates. Business groups amassed a war-chest to defeat the proposals.[2] On the other side, many traditionally active groups remained on the sideline, while a new group

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[1] Raymond Torto, Elliot Sclar, Maralyn Edid, and Ted Behr, "The Graduated Income Tax Referendum: League of Women Voters' Liberalism vs. Corporate Money," Report No. 7, Massachusetts Public Finance Project, Nov., 1973.

[2] The editor of the Berkshire Eagle summed up well the situation: "...business executives now are attempting to expand the philosophy that what's good for business is good for the state. They now are trying to get across the point that what's good for the personal well-being of the high-paid executive is good for Massachusetts.

This is the obvious thrust as they prepare to fight the referendum on a graduated income tax which will be on the ballot this fall. They are strategically tying themselves into multi-million dollar campaigns being readied by business interests to fight such referenda as a public power authority and flat electric rates." A.A. Michelson, "Industry amasses war chest to fight November referenda," Boston Globe, Aug. 28, 1976

popped up on the scene to help defeat the GIT -- Citizens for Limited Taxation.[1]

Nineteen Seventy-Eight brought a campaign which became a prelude to Proposition 2½. A suit brought by the town of Sudbury in 1974 resulted in a court ruling requiring all property in the state to be assessed at 100 percent. Traditional assessment practices had previously favored homeowners, for homes were assessed at a lower percent of market value then businesses. Full valuation would thus result in a massive shift of property taxes away from businesses and on to homeowners. (Estimates put the increase on individual homeowners at $265 million, an increase of roughly one-third).

This time, progressive forces took the lead in opposing a tax increase on individual taxpayers. This effort placed a state constitutional amendment on the ballot -- the Classification Amendment -- which sought to preserve existing property tax levels by classifying business properties at higher assessment ratios.[2]

The ensuing campaign was led by a well organized, and for a change, well financed, coalition. This group included Massachusetts Fair Share and Boston Mayor Kevin White. White, in a rather unprecedented move, appropriated approximately $1 million from the city's coffers to finance the campaign. Again, business groups organized to defeat the proposal, this time headed by high tech executive Herbert Roth

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[1] As part of the business campaign, Data General began a media barrage in the fall of 1976 aimed at intensifying Massachusetts' anti-business image and touting the virtues of locating in North Carolina.
Kidder, The Soul of a New Machine, p. 36.

[2] Individual homes were classified at 40%, commercial property at 50%, industrial property at 55%, and vacant lands at 25%.

of the LFE Corp. The business group, called the Committee Against Property Tax Discrimination, was almost wholly financed by corporate contributions. Under Roth's auspices, the organization collected $200,000 from 22 major companies alone; among the major contributors were Data General and Wang Industries with $5,000 each, and EG & G Inc. with $3,000.[1]

In the voter's eyes, business was on the wrong side of the issue. The measure passed in November 1978 by similar margins to previous defeats of the GIT.

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[1] Based on a Sept. 15,1978 reporting to the State Office of Campaigns and Political Finance, cited in a letter to the Boston Globe, "Critical of the Anticlassification Campaign," Oct. 4 1978

Behind the Scenes: Changes in Business and Property Taxes Since 1960

As the previous section describes, the political and financial power of business groups generally blocked attempts to lessen the regressiveness of taxes in Massachusetts. The net effect of major changes in the state's revenue structure over the past fifteen years (sales tax, declining business share of taxes, etc.) has been to increase regressiveness. Business now pays a smaller share than one or two decades ago; the average taxpayer pays more. Significant growth occurred in state taxes on individuals, especially from 1966 to 1975. And, at the local level, individual taxpayers were hit with major increases in property taxes after 1970. This can be seen in the following tables:

Table 4: Per Capita State-Local Property Tax Collections, for Selected Years, 1957-78

| | 1957 | 1967 | 1972 | 1978 |
|---|---|---|---|---|
| U.S. Average | $$76 | $132 | $206 | $305 |
| Massachusetts | $120 | $192 | $331 | $522 |
| Ratio Ma./U.S. | 1.58 | 1.45 | 1.61 | 1.71 |

Source: ACIR, Significant Features of Fiscal Federalism, 1979-80 Edition, Oct. 1980, p. 90.

Table 5: Taxes on Business as a Percent of Total State and Local Taxes *

| | 1957 | 1967 | 1977 | %age point change 1957-67 | 1967-77 | 1957-77 |
|---|---|---|---|---|---|---|
| United States | 36.8% | 32.6% | 30.6% | -11.4 | -6.1 | -16.8 |
| Massachusetts | 33.6% | 27.7% | 23.6% | -17.6 | -14.8 | -29.8 |

Source: ACIR, Significant Features of Fiscal Federalism, 1979-80 Edition, Oct. 1980, p. 68.

*Includes estimates for business share of sales and property taxes.

Events conspired against moderate income taxpayers in Massachusetts during the late 1960s and early 1970s. In 1968, the state took over welfare from the local level, and three years later, changes in federal income and eligibility guidelines further expanded the welfare rolls. In effect, the new responsibility for funding welfare at the state level consumed the monies generated from the sales tax, that otherwise might have gone for property tax relief. Other state taxes on individuals increased during this period: most importantly, the state, basic income tax rate increased first from 2.5% to 4%, and then to 5% by 1971, while other consumer taxes (e.g. gasoline and cigarette taxes) also doubled during these years. Although some business tax increases were levied during these years, they were modest by comparison.

There is no doubt that the state's committment to what were above average welfare payments during this period were costly.[1] (It is worth noting that the number of people in Massachusetts below the official poverty level is well under the national average -- in 1975 the Commonwealth had 7% of its population in this category versus 11% for the nation as a whole). But, as the following table demonstrates, this comittment to public welfare -- well established by the late 1960s -- did not bring Massachusetts' tax burden out of line with the rest of the country before 1973.

[1] In 1978-79, for example, per capita welfare payments in Massachusetts were 49 percent above the national average. See Appendix A, Table A-1. This represented no change from the previous decade, ACIR, ibid., p.40/.

Table 6: Massachusetts State and Local Taxes per $1,000 Personal Income Relative to the U.S. Average (in dollars).[2]

| | 1971 | 1972 | 1973 | 1974 | 1979 |
|---|---|---|---|---|---|
| United States | 148.1 | 157.6 | 161.4 | 156.8 | 156.9 |
| Massachusetts | 145.1 | 160.5 | 170.6 | 168.7 | 174.6 |

Source: Census of Governments, U.S Bureau of the Census, 1979.

The early 1970s was a period of economic depression for the state. Older manufacturing industries such as textile and shoes were hit particularly hard in the downturns of 1970 and 1974-75. And the 26 percent drop in military prime contracts from 1968 to 1970 crippled the state's important defense contractors. Unemployment ran much higher in Massachusets than for the nation as a whole ( Massachusetts average unemployment rate, for 1971-76, was 7.8%, compared to 6.4 % for the U.S. average) and swelled to high of 11.2% in 1975. The impact of the 1973 oil embargo on the Northeast also dampened the short-term prosperity of manufacturing firms, state and local governments, and households. The change in relative energy prices produced a massive transfer of income from Massachusetts and other states in the Northeast and the Midwest to Southwestern states. The result of such forces was that Massachusetts dropped from 9.8 percent above the national average in personal income in 1970 to 1.1 percent above in 1978.

The table below helps to demonstrate the effect of the state's economic stagnation during the early 1970s on the state's fiscal system. Personal income growth for the state experience two of the three lowest years for the decade in 1970-71, while corresponding to this, revenue increased at its fastest pace in 1971-72. The state was thus forced by economic circumstances to pay for more unemployment compensation, welfare, and other human services with a shrinking tax base. Thanks to the politics of tax reform in Massachusetts, this came at the expense of moderate income citizens.

Table 7: Annual Change in Personal Income and Own Source State and Local Revenues, Massachusetts, 1969-78.

| | Percent Change From Previous Year* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
| Income | 7.5 | 5.7 | 6.4 | 8.3 | 8.2 | 8.4 | 7.0 | 6.3 | 8.8 | 9.9 |
| Revenue | 15.1 | 11.0 | 25.0 | 14.5 | 11.0 | 6.6 | 7.0 | 9.6 | 9.5 | 8.6 |

*Income data for calendar years, revenue data for fiscal years.

Sources: U.S. Bureau of Economic Analysis, Survey of Current Business; U.S. Bureau of the Census, Governmental Finances.

It was also during the early 1970s that the state and local tax burden rose above the national average. (See Table 6). Sluggish economic growth, the impact of the flight of industry on the tax base, and the various effects of the massive increase in energy costs on the Northeast, all helped to maintain these higher levels throughout the decade. Further increases in the tax burden were prevented only by sizeable budget cuts in welfare and public higher education in 1975.

However, the single and most dramatic increase since 1970 did not occur at the state level. As shown in Table 4, per capita property taxes in Massachusetts more than doubled from 1967 to 1978. This constituted a jump from 45% above the national average to 71%. What was the cause of this? First of all, the insufficient amount of local aid provided by the state. Secondly, because the Commonwealth's industrial and governmental development matured earlier than in other parts of the country, pension costs

are higher. Another important factor can be traced to state government. Legislators, through most of the 1970s, enacted legislation such as Chapter 766 (requiring adequate education for physically and mentally handicapped children) and a variety of environmental statutes which were state mandated, but locally financed and administered.

Besides the aggregate increase, two distinctive characteristics of this trend stand out. First, the property tax is highly regressive, particularly so in Massachusetts.[1] Second, the business share of property taxes, the largest tax paid by business in the state,[2] dropped by almost one-half in the last twenty years, at a rate much faster than the U.S. average. (See below).

Table 8: Property Taxes on Business as a Percentage of Total Property Taxes.

| | | | | | %age point change | |
|---|---|---|---|---|---|---|
| | 1957 | 1962 | 1967 | 1977 | 1957-67 | 1967-77 |
| United States | 45.1% | 42.8% | 39.5% | 34.6% | - 5.6 | - 4.9 |
| Massachusetts | 35.0% | 32.6% | 29.1% | 20.8% | - 5.9 | - 8.3 |

Source: ACIR, Significant Fea tures of Fiscal Federalism, 1979-80 Edition, Oct. 1980, p.91.

The last aspect of the Massachusetts tax quagmire to consider is the declining business share of state and local taxes. In 1980,

[1] See Appendix A, tables A-2 and A-3.

[2] See table 3.

Massachusetts was one of only 8 states that received less than 25% of its taxes from corporations, banks, insurance companies, and other enterprises. One aspect of this is the declining business share of local property taxes. Moreover, business has been equally successful at the state level in reducing its share of taxes.

Massachusetts had a reputation in the early postwar period for having excessively high state taxes on corporations, as well as high property taxes. But in the past two decades, especially since 1966, business tax rates have come into line with other states. While a sales tax has been imposed (and was raised to 5% in 1975), and while property taxes have gone through the roof, the corporate excise (income) tax increased only from 6 to 8.55% for roughly the same period. Meanwhile, exemptions on business taxes have grown rapidly (thus lowering the effective rate). Since the mid-1960s, corporations have been granted exemptions on dividends received from other companies and from one-half of capital gains. In the early 1970s, the state government enacted depreciation allowances on the cost of equipment used to comply with state water pollution statutes; it granted first a 1% and then a 3% tax credit for investments made in-state; and it enacted a $500 tax credit for hiring a person off of welfare, state manpower, prison training, or other state programs. In recent years, laws dealing with the apportionment formulas for firms with multi-state operations have been revised for the purpose of expanding loopholes. A law has even been passed to limit a firm's tax payments when it

grows rapidly from year to year. A recent study showed Massachusetts to be one of the most generous states in the level of tax breaks and subsidies to business.[1] The Massachusetts Revenue Department has estimated the [illegible] cost of these breaks to total over $100 million per year.[2]

The effect of all of this can be seen in the table below. Of the total state and local tax bill, only 7% was paid directly in 1980 by corporations and banks, exactly one-half their share in 1949.[3] Property taxes (for which business pays only one-fifth) and personal income taxes, 41% and 27% of the total respectively, effectively carry the load (See Table 5).

Proposition 2½, CLT, and the MHTC

These factors taken together -- the increasing tax burden plus the general effect of economic malaise -- coupled with a growing reputation of state government as corrupt and mismanaged, have placed increasing burdens on the average taxpayer over the past twenty years. Such pressures have made conditions for a tax revolt ripe in Massachusetts. Proposition 2½ served as a vehicle for this frustration. Significantly, the source of many of these pressures can be traced to the business community's effective domination of tax politics during the last two decades.

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[1] Jack Kittredge, "Massachusetts Business Subsidies: Who Pays, Who Benefits?" Massachusetts Community Action, January, 1981.

[2] Ibid., p. 1

[3] "Proposition 13 vs. Proposition 2½", Boston Sunday Globe, Oct. 5, 1980, p. B4.

The passage of Proposition 2½ is best understood as a result of a New Right organization taking advantage of taxpayer frustration, and a major business group, the MHTC, ensuring that enough funding was provided for the Proposition 2½ campaign to carry it to election day in November 1980.

The organization initiating Proposition 2½, CLT, dates from early in the decade. Edward F. King[1] who headed the anti-GIT campaign in 1972, brought together several other associates[2] in early 1973 for the purpose of forming an on-going tax group which would present a more consistently right-wing perspective than existing business groups, such as MTF and AIM.

CLT's first major project was in 1975. The group sought an amendment to the state constitution which would limit state spending. The effort fell short by a few thousand signitures in getting the proposal placed on the state ballot. The year after, the group participated in opposing the GIT referendum.

When Proposition 13 passed in California in June 1978, conservatives and ultra-right organizations throughout the nation were immediately emboldened. CLT jumped on the bandwagon with its proposal to limit the property tax rate to 2½%. In the summer of 1978, they gathered enough signitures to petition the legislature to consider 2½; the General Court later voted the measure down by 146 to 5. In November of that year, Attorney

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[1]Not to be confused with former Massport chief executive, Edward J. King, elected Governor in 1978.

[2]This group included Raymond Shamie of Metal Bellows Inc., a later member of the MHTC.

General Francis X. Bellotti ruled that the measure was unconstitutional.

As late as 1979, CLT was still having trouble in generating support from the state's business and political establishment for the proposal. Its public image did not help CLT's effort either. In 1978, King (who ran in the Republican gubernatorial primary) was replaced as executive director by Donald Feder. Feder, according to newpaper reports in May of 1979, stated that schools, roads, and other basic functions of the public sector could best be taken care of by free enterprise, and that government should only provide for police, courts, and prisons.[1] Such right-wing pronouncements provided a convenient target for even conservative opponents of 2½.

In gearing up for the 1980 referendum, CLT jettisoned Feder, broadened its scope, and sweetened its pot. It added a major cut in the auto excise tax which endeared CLT to the state auto dealers association. At the same time, the tax revolt leaders' rhetoric began to focus on broader questions of "government fat" and "economic development." CLT argued that the massive cuts in property taxes would not eliminate essential public services. It claimed that the cuts could be absorbed by eliminating waste at both the state and the local level, enabling increased state aid to localities to smooth out any potential crises in municipalities. CLT especially began to play on popular resentment of corruption in state government, even though Proposition 2½ is not in any sense a mechanism for ameliorating the corruption problem. However, CLT

[1] Boston Globe, May 10 1979.

insisted that 2½ would be the last opportunity for the state's voters to "send the State House a message."

Still, CLT's political base remained slim. The MHTC and AIM did collect signatures for the petition at an early stage in the campaign. These two groups began to receive pressure from key state legislators to remain aloof from CLT. Thereafter (until October), the MHTC maintained a low profile on the campaign, although a few firms (such as Metal Bellows, Analog Devices, and Data General) supported CLT privately, as was the case with a number of AIM members. MTF supported state tax cuts and reductions in human services, but still saw 2½ as too severe a measure.

As the campaign geared up in August 1980, the popularity of the proposal gave CLT a sizeable advantage. But by the following month, a number of factors began to cloud the possibilities for 2½'s passage. First, a constitutional convention called by the governor was convened on September 18. While Governor King stayed officially neutral, he supported the "concept" of the measure. On the other hand, key state legislators, such as Representative Gerald Cohen (chair of the House Taxation Committee) and Senate President William Bulger were ardently opposed to the measure. Cohen introduced a constitutional amendment proposed by MTF and MHTC limiting the level and growth of the total state and local tax burden to the "17 state average," and to the growth of personal income in the state. While the proposal moved through the legislature, Cohen and Bulger met with representatives of AIM and the MHTC to demand their neutrality on the 2½ referendum.

As reported by Warren Brookes:

> Both AIM and the High Tech Council were told in no uncertain terms that if they kept up their support for 2½, they could forget about the rest of their legislative agenda and could expect punitive tax legislation as well.
>
> At one point, AIM was tol that Senate President William Bulger's "door would be closed" if they did not back down on Proposition 2½ and if they did not go along with the Cohen compromise amendment.[1]

Second, as CLT began to run short on staff and funding, a massive anti-2½ campaign was beginning to emerge — with very sizeable contributions from public sector unions, and with the support of virtually every moderate and liberal civic group within the state. Faced with this, CLT was in poor shape to conduct the final month of the campaign.

Then, only days after the passage of the Cohen amendment, the executive council of the MHTC convened to discuss the possibility of formally backing Proposition 2½. On the surface, such a move seemed contradictory in light of the arrangement just made with the legislature (after all, the Cohen amendment was the centerpiece of the MHTC tax agenda) and the dire consequences that would result from support of 2½. According to knowledgable observers, both at the time and more recently, have attributed this turn of events to a desperate threat made by CLT and backed by other New Right groups that the MHTC would lose their support for any future action in state politics. Whether or not this was the case, the MHTC came out in support of 2½ on October 1st. The council's president, Alex d'Arbeloff (president

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[1] Boston Herald-American, Oct. 2, 1980

of Teradyne), sent off a letter to all 112 members of the organization asking for minimum contributions of $500. While many of the larger corporations did not respond, the MHTC was able to raise well over $200,000 in a matter of days.

The pattern of contributions to the Prop. 2½ campaign clearly highlights the dominant influence of the MHTC and its member firms in financing the pro-2½ efforts. CLT began raising money for the campaign in July of 1980. The first large infusion of funds was $5000 from a small high tech firm, Metal Bellows, whose president, Rayomnd Shamie, had helped to found CLT and who sits on the board of directors of the MHTC. Although helped along by sizeable contributions from other high tech firms, such as Alpha Industries, Analog Devices, and Thermo Electron, and by numerous contributions from Massachusetts autodealers, by October CLT had managed to amass only $75,000 (only 20 percent of the $377,000 which would ultimately go towards the pro-2½ effort.) In the last month before the day of voting, $300 thousand would be raised, with HTC members kicking in three-fourths of this amount.

As soon as the MHTC formally decided to financially sponsor 2½, thousands of dollars were raised in short order to support a last ditch media blitz to offset the mounting skepticism about the proposition as a sensible tax reform mechanism. The financial muscle of the MHTC is evidenced by the $96,000 forthcoming on the first day of reported contributions to the Council's 2½ campaign vehicle--Concerned Citizens for Limited Taxation. The majority of

this came from just seven firms led by Data General's $16,000; $12,000 each from Prime, Teradyne, GenRad, and Millipore; and $8000 each from Unitrode and GCA. Other MHTC member contributors include: Foxboro, Computervision, Augat, Data Terminal, and Wang Labs. Overall, of the $377,000 total amount raised in the pro-2½ campaign, sixty percent ($229,000) came from MHTC member firms, and sixty-five percent ($246,000) came in contributions of $1000 or more.[1]

While the rest is history, a few aspects of the story are worth noting. First, the following statement indicates at least what the MHTC offered the public as an explanation for its sudden formal support for the campaign:

> According to d'Arbeloff, the council wants to light a fire under the legislature for tax reform. "If people vote against this tax limitation, we find it very difficult to see how political people can give us what we need to expand in the state -- an agreement on tax matters for long-term."[2]

Clearly, the MHTC expected to get its way one way or another in the hub-bub over the passage or defeat of 2½. Second, by mid-October, the voters were becoming distinctly ambiguous on the issue. Polls by the No on 2½ committee showed the gap in favor of the proposal having dropped from 40 percent in the late summer to 5 or 10 percent. A Globe poll demonstrated that support for or opposition to the referendum hinged upon the level of media campaigning by

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[1] See Appendix B

[2] Boston Globe, Oct. 6,180

either side. Finally, in the last ten days of the campaign, as a result of the massive infusion of funds from MHTC's CCLT organization, expenditures on television and radio commercials, for the first time, were heavier on the pro-side than on the con. The 59 to 41 margin in favor of 2½ was just wide enough to ensure that legislators could not politically afford to amend or rescind 2½, which was within the legal power of the legislature. And, as describe previously, the key figures in the state house were predisposed to do so.

## IV. Assessment of the HTC Agenda and Approach

> The Council's efforts represent industry's best effort yet to alert the State to the danger that companies will have to leave Massachusetts, or at best expand outside the State, if fundamental problems are not solved. The Council has done a more effective job of delivering that message than anyone else ever has.
>
> --George S. Kariotis, Massachusetts Secretary of Economic Affairs "Progress Report 1980" MHTC

> Let's just say there has been a major shift on the political landscape.
>
> --Howard Foley, President, MHTC "The Council Feels Its Muscle," Boston Globe, Nov. 18, 1980

The HTC has been quite effective in capitalizing on the politcal leverage flowing to a rapidly expanding manufacturing sector in Massachusetts. The Council has expressed its concerns (especially pertaining to the shortage of senior engineers), articulated its goal (reduction of the personal tax burden), and cleverly packaged its program as "people-oriented" and not self-seeking.

The council would like the public to believe its program is oriented primarily to benefit employees in the high tech industry and all state taxpayers. The "Social Contract" between the King Administration and the MHTC succinctly symbolized the campaign--state and local tax reduction in exchange for thousands of new jobs that were allegedly on the verge of being created elsewhere. The council's 1980 Progress Report quoted key state

legislative leaders, as well as Secretary Kariotis, on the sophistication and remarkable success of this political strategy.

> I'm glad to see an organization whose members are so important to our economy working as hard as the Council is to improve conditions in Massachusetts. They have been helpful, and consistent, by gathering hard evidence on the tax issue, dramatizing it through the Social Contract, and working for results.
>
> John J. Finnegan, Chairman,
> House Ways and Means Committee [1]

The question arises, however, as to how the Council's activities have served the interests of both the critical high tech industry and the people of the state in general. A look at the evolution of the Council's policies, how they have been promoted, and their likely impact, leaves one with many doubts about the appropriateness of the Council's activities, especially with regard to tax policy. Three general observations, which will be elaborated on below, emerge from a look at the history of the HTC.

(A) The effort to articulate tax reduction as the premier HTC goal appears to have been the project of only a handful of high tech executives. The Council's most visible imprint on public policy to date, Prop. $2\frac{1}{2}$, appears to have been supported by firms representing no more than a third of total electronics sector employment in Massachusetts. Moreover, for the two high tech executives most outspoken on public policy issues, there appear to be peculiar inconsistencies in terms of the rationales they offer for public consumption in relation to the actual practices and interests of their firms.

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[1] MHTC 1980 Progress Report, p. 4

(B) On several counts it is evident that Prop. 2½ was an inappropriate medicine for the ills its high tech supporters sought to relieve. First, the personal tax burden in Massachusetts, while high, has evidently not been a serious impediment to continued growth in electronics. Second, if it was necessary to increase the take-home pay of senior engineers, far less sweeping remedies were (and continue to be) available to high tech firms. Third, the estimated profit savings to high tech firms from Prop. 2½ is essentially marginal in relation to their historical profit growth.[1] And finally, certain provisions of Prop. 2½ operate to restrict high tech expansion in the state, and in general, the measure throws the process of state and local government into disarray and jeopardizes thoughtful action by the legislature and municipal governments.

(C) While advocating severe public belt-tightening, numerous MHTC firms have not hesitated to seek generous portions of governmental special favors for themselves.

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[1] Since the council's stated objective in backing Proposition 2½ was to lower the personal tax burden in order to be [illegible] in better position to attract experienced engineers, executives, and other professionals, the profit savings is guaged by the property and auto excise tax savings accruing to senior personnel, which firms could have, alternatively, financed directly.

A. A few outspoken executives

The most persistent high tech proponents of the tax reduction proposals--i.e., those providing financial support for Prop. 2½--represent, in terms of employment in Massachusetts, only a minority of the broader high tech electronics community and possibly only a powerful minority within the MHTC itself. Indeed, tax reduction and limitation as a solution to problems facing the high tech industry seems to have been the pet project of a handful of outspoken high tech executives. These few have parlayed the economic might of threats to expand outside of the state into a very effective political machine, with an effective public relations component.

According to the best available information, in 1979, 10 firms accounted for 54 percent of Massachusetts employment in the electronics industries; 20 firms accounted for 71 percent; 30 for 81 percent; 40 for 87 percent; and the largest 58 firms, all with employment greater than 500, represented 94 percent of electronics employment in Massachusetts.(1)

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(con't from prev. page) by paying higher salaries. The property tax savings to the firms themselves is also considered.

[illegible]
1 Commerce Register, Inc. Massachusetts Directory of Manufacturers, June 1979, Hohokus, N.J., 1979.
Total electronics employment for 1979 was 141,400. Massachusetts Division of Employment Security.

The following table indicates the support for Prop. 2½ among these largest 58 firms.

Table 9: Largest Massachusetts Electronics Firms and Support for Proposition 2½.

| | | percent of total |
|---|---|---|
| 1979 Total Electronics Employment | 141,400 | 100.0% |
| 58 Largest electronics firms | 132,600 | 93.8 |
| 28 Largest non-MHTC firms, non-contributors | 47,200 | 33.4 |
| 30 Largest MHTC firms | 85,400 | 60.4 |
| 18 MHTC contributors to 2½ | 39,200 | 27.7 |
| 12 MHTC non-contributors | 46,200 | 32.7 |

Source: Massachusetts Directory of Manufacturers, June, 1979; Massachusetts Division of Employment Security; and Massachusetts Office of Campaign and Political Finance.

From this table it is evident that Prop. 2½ did not command the support of most of the larger electronics firms representing roughly two-thirds of statewide employment in 1979.

The 18 Council Prop. 2½ supporters accounted for only 27.7 percent of electronics employment; including the other high tech council contributors tp Prop. 2½ (60 Council members in all made contributions), the high tech Prop. 2½ supporters can account for no more than one-third of electronics employment in Massachusetts.

The fiscal policy focus, particularly the emphasis on reduction of state and local taxes, has been a long-standing concern of two prominent high tech executives, Ray Stata of Analog Devices and Edson deCastro of Data General. Throughout the late 1970s, Stata and deCastro have repeatedly attributed the problem of attracting experienced engineers to the state's high personal tax burden. However, given the considerable press coverage that complaints have received about how high taxes drive away senior engineers, it is perhaps surprising that in almost each instance, it is either de Castro or Stata who is speaking out. If taxes have been such a critical issue for commercial success in high tech electronics, no one is publicly complaining besides these two gentlemen.

An organization created in the early 70's under the Sargent administration--Jobs for Massachusetts--first sought to air the major problems faced by small high tech companies. This high tech interest group within Jobs for Massachusetts, led by Stata, identified the shortage of engineers and technical personnel as a critical issue.

During the Dukakis administration, the Task Force on Capital Formation was formed in 1976 "to make recommendations on specific programs which would help increase the flow of capital to businesses in the Commonwealth."[1] The Task Force identified

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1. "Summary Report of the Secretary's Task Force on Capital Formation for Economic Development," Jan. 24, 1977, p. 1.

the importance to the State's economy of small, innovative, technology-based companies and developed policy recommendations to increase the availability of capital to small, technology-intensive firms and to encourage new firm formation. A major rift eventually developed between Dukakis and two of the high tech representatives on the Task Force, Stata and de Castro, apparently over what fiscal policy recommendations the Task Force would make. de Castro and Stata felt that the real problem impeding growth in Massachusetts was not the supply of capital but the "cost of doing business in Massachusetts."[1] In order to reduce the cost of doing business in the state, they advocated lowering state taxes and cutting expenditures. By this point, they had already begun to pose as a rationale for lowering taxes the relation between taxes and manpower costs. The Task Force Report noted:

> Business investment is the principal mechanism available to the American economy for the creation of jobs. Taxes influence the amount of profit, which alone attracts that investment, first because they are a direct cost of doing business, and second, because they tend to increase the cost of living and hence, manpower costs. State taxes and the expenditures which they support are, unlike market forces and federal policies, factors within the control of state government and therefore constitute the most visible measure of a state's commitment to economic development.[2]
>
> ...
>
> The high cost of living in Massachusetts directly affects the highest cost of doing business--manpower, particularly mobile middle management essential to our high technology and export service industries.[3]

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[1] Ibid.

[2] Ibid., p. 13.

[3] Ibid., p. 1.

Following their experience on the Task Force, de Castro and Stata then moved to bring together the companies associated with the Jobs for Massachusetts high tech group and form their own industry association, what became the Mass. HTC. They recruited for the position of executive director, Howard Foley, who had been the executive director at Jobs for Massachusetts and before that an IBM sales executive. Stata served as the Council's first president.

From the beginning, the MHTC's campaign has stressed the difficulty of attracting senior engineers to "Taxachusetts", the lower relative tax burden in states which compete with Massachusetts for high tech plants, and the threat that Massachusetts-based firms will expand outside of the state at a faster rate than in-state. The council used the "Social Contract" signed with King in early 1979 to publicize their position on the link between taxes and job growth.

That the council went on the offensive regarding tax reduction owes to the influence of Stata and deCastro. An article in Electronics magazine shortly after the council was formed indicated that other members had different conceptions of what role the MHTC should play. William Thurston, president of GEnRad, though the council should mainly supply research to the legislature

on the impact of pending measures on the high tech community. On the other hand, according to the report,

> Edson de Castro is thinking along different lines. The president of Data General, he is also a council board ~~member~~ and steering committee member. He looks to the genral public for action. "We have to make the general population so aware of the problems of high-technology companies that the legislature will have to respond or be voted out of office," de Castro says. "We've got to show how people's jobs and livelihood depend on high-technology companies."[2]

In his attempt to make people "aware of the problems of high tech companies," de Castro repeatedly recounted one of his company's experiences in attempting to recruit senior professionals to Massachusetts. Unable to draw the right people to Massachusetts because of the higher personal

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[1]Bernard J. O'Keefe, chief executive officer at E.G.&G., and who has headed the Governor's Management Task Force under both Dukakis and King, on a different occasion commented:

> "The overall tax burden in the state is high but not the highest of the industrial states. However, our reliance upon property taxes is why we're called Taxachusetts. Business is not comfortable with fixed costs. When you try to get business to invest in an area where they immediately have fixed property costs whether or not they're successful, they shy away from that. We don't mind paying income taxes. We don't want to pay taxes anymore than anybody else. But if you can go in there and make money you expect to pay income taxes. But what you don't want to do is to go into an area where you pay taxes whether you're successful or not. That's the biggest single problem with Taxachusetts."

"Taking a Hard Look at State Government," Boston Globe, Dec. 21, 1980.

[2]"Massachusetts Firms Strive for Change," Electronics, Jan. 5, 1978, p. 113.

tax burden, Data General was forced, according to de Castro, to open an R&D facility in the Research Triangle Park in North Carolina. In a letter to state Senate President William Bulger and House Speaker Thomas McGee, de Castro contended that Massachusetts would experience little further job expansion unless taxes were cut:

> This is not our choice, but that of the potential employees we are trying to recruit. People simply won't live and work in states where taxes are so significantly higher.[1]

Not only does the Council's tax reduction campaign appear to represent the principal objectives of deCastro and Stata, there's virtually

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[1] "Data General Plans a New Computer Plant--in North Carolina," Boston Globe, Sept. 18, 1979.

no evidence to indicate that it enjoyed the support of other important high tech firms which do not belong to the HTC. More significantly, there is evidence to indicate that the supposed "link between taxes and jobs"[1] was just a gambit to be used in pressing for tax (and spending) cuts. As discussed in an earlier section, there may be other reasons for expansion outside of the state other than the difficulty in attracting experienced technical professionals.

de Castro's firm, Data General, for example, has been following a parallel plant location strategy since at least 1976. The firm's 1978 annual report noted, "In 1978, several plants were built or expanded to duplicate most major manufacturing operations done previously in a single location." By opening a new systems integration facility in North Carolina, "Data General is no longer dependent on one location to meet shipments." The North Carolina operations also duplicated printed circuit board fabrication and assembly operations done in Massachusetts and New Hampshire. Plants in Texas and Maine manufacture similar peripheral equipment.[2] Thus, an important impetus to expand outside of Massachusetts could very well have been to minimize the potential risks of geographic concexntration.[3] In addition, as is the case with the major merchant semiconductor

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[1]MHTC Progress Report 1980, p. 7.

[2]Data General, Annual Report, 1978.

[3]Kidder's book about how Data General managed to push its engineers to design an advanced minicomputer in record time stresses that the firm sought to play off a design group in Massachusetts against one in North Carolina. Thus, it appears that Data General also capitalized on its parallel location practice as a strategy to motivate workers to compete for company resources. Kidder, The Soul of a New Machine.

manufacturers, Data General has plants in Hong Kong, Philippines, and Thailand which produce semiconductors for use in its own computer systems.[1] These plants were located to take advantage of extremely low labor costs and special provisions of the U.S. tariff schedules for electronic goods assembled off-shore.

A shortage of skilled technical personnel, moreover, has not prevented such Massachusetts companies as Digital, Analog Devices, Prime Computer, and Wang from locating plants in Ireland. A plentiful supply of low-skilled labor and location inside the EEC's tariff barrier have helped to attract fifty U.S. electronics companies to Ireland during the period, 1975-80.[2]

The preoccupation with attracting experienced, senior professionals to Massachusetts is, in essence, a "pirating" strategy--enticing key personnel away from other firms.[3] Stata's pronouncements on the subject formulated for political consumption in Massachusetts should be contrasted with his assessment of the pirating approach contained in material oriented to the engineering and industry communities. For example, in an article in Electronic Engineering Times, Stata wrote in regard to strategies to not

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[1] Data General, Annual Report, 1980.

[2] Electronics, June 5, 1980, p. 102.

[3] An understanding among electronics firms in Massachusetts to call a halt to the salary bidding wars which "pirating" can lead to was most likely an important factor in the formation of the MITC. The firms joined forces in order to be better able to "pirate" from out-of-state.

follow in coping with the "engineering-resource shortage:"

> And we can't count on piracy because, for the most part, piracy doesn't work anymore. . . There's nobody (referring to the early 70's practice of pirating from government contract-short aerospace and military firms) left to pirate from[1]

Stata's advice to the industry was three-pronged:

> . . . go back to college campuses and recruit; make better and more efficient use of the whole arena of continuing education and retooling of the existing workforce; and increase emphasis on the productivity of the engineering work force. . .

He went on to note that a MHTC survey of its member firms revealed that only one-fifth had effective college recruitment programs, half "indicated they have de facto policies that favor hiring experienced people over inexperienced" and that only one-third maintained any formal manpower training programs.[2]

[1] Ray Stata, "The Engineering-Resources Crunch," Electronic Engineering Times, May 28, 1979.

[2] Ibid.

B. The wrong medicine

" . . . Proposition 2½ is the correct medicine for a chronic illness."

Ray Stata, "The Right Message," Boston Globe, Nov. 3, 1980.

Proposition 2½ and the preoccupation with the personal tax burden it reflects is the wrong medicine for the problems facing the high tech industry. Proposition 2½ and other tax limitation measures are unlikely to enhance high tech firms' ability to attract senior professionals. Moreover, specific provisions of 2½, as well as its longer-term impact on political and governance processes, may operate to jeopardize and otherwise favorable environment for the high tech electronics industry in this state. This section considers four aspects of the relation between taxes, engineers' take-home pay, and electronics employment growth and profitability:

(1) comparative state tax burdens and high technology electronics employment expansion

(2) increasing senior professional take-home pay by increasing salaries

(3) the profit impact of Prop. 2½

(4) Prop. 2½ as a deterrent to growth

(1) Comparative State Tax Burdens and High Tech Electronics Employment Expansion

Because high tech executives and the MHTC have placed great emphasis on relative tax burdens across states, some examination of their claims is in order. Two issues have been raised. First, the question of attracting personnel. The high cost of living in Massachusetts due to above average taxes has been posed as the major deterrent to hiring out-of-state engineers. The second question is the purported existence of a group of 17 states that compete for high tech expansion.

Looking at the first question, the premises for the argument are dubious. As noted earlier, other considerations other than taxes are at least, if not more, important. But even if this argument is granted credibility, what do the figures show?

A Federal Reserve Bank study sheds interesting light on the matter.[1] The authors of the study present rigorously researched figures on comparisons for state and local tax burdens at the $25,000 and $50,000 income levels. The results were not surprising: at the $25,000 income level, several states, including Massachusetts were 40% above the average, while some states were 40% below average. The absolute spread between the lowest and highest states was $2,015. state and local taxes were the highest -- 37 percent aboe the average -- with Texas lowest at 47 percent below the average. The absolute spread was $5,778. However, the study included one factor which has been conspicuously absent in discussions by the MHTC and others of the issue, namely, the impact of federal income taxes on comparative burdens.

[1] Ecker, Deborah and Syron, Richard, "Personal Taxes and Interstate Competition for High Technology Industries." New England Economic Review (September/October 1979) pp. 25-32. The authors use the the "17 competing industrial states" defined in the MHTC's social contract with Governor King.

The differences among states, according to the study's authors, is"greatly reduced by the deductibility of these payments (state and local taxes) from federal income tax liability." [1] The differences of 80 percent or more between the extremes to 24 percent for the $25,000 income level and to 23 percent for the $50,000 income level. At the lower level, the absolute difference falls to $1,490; at the higher level the absolute difference drops to $3,351. At such hig income levels, the difference between tax burdens can be considered significant at the extreme only. Furthermore, it is clear that the extent of the difference is much less than is generally understood. Considering that increased salary costs are only partly borne by the firm (because its tax liabilities are reduced), the cost of meeting these differences in tax burden (if high tech firms chose to do so) is certainly quite moderate.

The second issue concerns the "17 competing industrial states."[2] These states were selected by the MHTC and generally have been accepte. by state policy makers and the press uncritically. Two inferences have been drawn by concerned parties from the 17 state average tax burden: first, that these states legitimately represent an inclusive group of the important areas of high tech industry expansion, and second, that the low tax states among the group have been more successful in attracting new growth in the industry.[3]

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[1] Ibid., p. 26.

[2] The 17 states include: Arizona, California, Connecticut, Illinois, Maine, Maryland, Michigan, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Texas, Vermont, and Washington.

[3] This view has been bolstered in recent months by the popularity among business groups and state legislators of a study done by Laffer Associates, which was commissioned by the Massachusetts Business Roundtable (the MHTC is a member of the MBR). See A.B. Laffer Associates, "Analysis of Fiscal Policy and Economic Growth in Massachusetts," April 16, 1981

As previously noted, the idea that taxes are a driving force in high tech location is questionable. To get a better sense of where expansion has actually occurred in recent years, we surveyed these and other states in order to determine which states experienced substantial employment growth from 1975 to 1980.

Considering that the percentage of absolute increase for high tech employment reflects where firms within the industry have chosen to expand, the results of our survey indicate that the majority of high tech electronics expansion has occurred in high tax states. Table 10 on the following page indicates relative state and local tax burdens for the 12 states with the greatest absolute increase in high tech employment--each state in the table had over two percent of the total national employment expansion. Six states, including Massachusetts, with state and local tax burdens <u>above</u> the national average, had 50.0 percent of the total U.S. absolute increase in employment for 1975-80. The six states with <u>below</u> average state and local tax burdens accounted for 25.9 percent of the absolute increase. As the last column of Table 10 indicates, the average increase in electronics employment for the 6 high tax states exceeded that for the 6 low tax states.

Eight of the twelve states in Table 10 are among the MHTC's "17 state" group. (Massachusetts is not counted in the 17.) The other three states, Minnesota, Oregon, and Florida, which together account for an eighth of the increase in high tech employment,

are not among the 17. The other nine states comprising the 17--CT, ME, MD, MI, OH, PA, RI, VT, and WA--together account for less than 8 percent of the employment increase.

With respect to the business share of taxes by state, two things are worth noting. First, as the table demonstrates, the business share of the total state and local tax burden is somewhat lower in the high tax states than in the low tax states, while the business share of property taxes is roughly the same in both high and low tax states. Second, Massachusetts businesses pay the lowest share of either property or total state and local taxes among the states with the greatest growth in high technology. This means that, although Massachusetts is one of the highest tax states in the nation, businesses pay lower effective rates in Massachusetts than do their counterparts in states with lower tax burdens. For example, Massachusetts had the highest per capita

(continued on page 76)

| High Tax States* | State and Local Tax Burden, 1978-79[1] | Business Share of Total State and Local Tax Burden, 1977[2] | Business Share of Property Taxes, 1977[3] | % of Total Increase in Electronics Employment, 1975-80[4] | % Increase in Electronics Employment for Each State, 1975-80 |
|---|---|---|---|---|---|
| New York | 201.37 | 30.4% | 38.6% | 4.0% | 16.5 |
| Minnesota | 186.11 | 26.2 | 27.6 | 3.4 | 47.6 |
| Arizona | 183.62 | 31.8 | 53.0 | 3.6 | 76.4 |
| Massachusetts | 174.63 | 23.6 | 20.8 | 10.7 | 63.7 |
| Oregon | 173.16 | 27.7 | 35.8 | 3.0 | 140.5 |
| California | 157.21 | 30.9 | 33.2 | 25.3 | 53.2 |
| Average:[5] | 179.35 | 28.4 | 34.8 | | 66.3 |
| Total: | | | | 50.0 | |
| New Jersey | 149.45 | 29.8 | 25.9 | 2.3 | 19.1 |
| Florida | 144.13 | 32.0 | 30.4 | 6.0 | 88.0 |
| Texas | 140.96 | 44.1 | 52.1 | 9.8 | 85.2 |
| North Carolina | 139.82 | 29.1 | 42.0 | 2.5 | 52.7 |
| Illinois | 136.09 | 32.0 | 39.4 | 3.0 | 19.2 |
| New Hampshire | 130.71 | 30.1 | 25.5 | 2.3 | 84.4 |
| Average: | 140.19 | 32.9 | 35.9 | | 58.1 |
| Total: | | | | 25.9 | |
| Unites States: | 156.93 | 30.6 | 34.6 | 100.0 | 43.9 |

* "High Tax State" and "Low Tax State" are defined here as being above or below the national average for state and local tax burden.

See next page for footnotes.

[1]Defined as "Own Source Revenues" per $1,000 personal income. These revenues include taxes at the state and local level, plus fees and other charges by the state (e.g. fishing and driving licenses) and municipality (e.g. ambulance services). Excluded are state aid to localities and federal aid.

[2]Source: U.S. Bureau of the Census, Governmental Finances in 1978-79, October 1980, p. 94

[3]Source: ibid., p. 91

[4]Employment in the major electronics industries: Office and Computing Machines (SIC 357), Communication Equipment (SIC 366), Electronic Components (SIC 367), and Measuring and Controlling Instruments (SIC 382).
Data obtained from state employment security agencies in August, 1981.
Except as noted employment figures are based on annual averages for 1975 and 1980 according to the Current Employment Statistics program: NC and MA data from ES-202 reports; TX SIC 357 and SIC 367 data for month of June; all AZ data for July; data for TX SIC 382 includes some for SIC 381 (engineering and scientific instruments). Employment levels for the following industry categories for certain states were approximated using County Business Patterns (U.S. Dept. of Commerce): NC, SIC 382; MN, SIC 382; and NH, SIC 366.

[5]Unweighted averages.

property tax rate -- in 1979 -- in the country. By multiplying the per capita rates times the business share, the actual rate of business property taxes per capita can be determined. This method gives the per capita property tax rate in Massachusetts in 1979 to be $103.58, vs. $131.58 for Texas and $128.04 for Illinois, the latter being "low tax states".)

These figures support a number of conclusions. First, the 17 state group chosen by the MHTC cannot be said to reflect the most important competitors for high technology employment. Second, the exclusion of certain states suggests that the group was selected so as to produce a low average tax burden. (Minnesota and Oregon, among the highest 12 states in high tech expansion, have considerably above average state and local tax burdens). Also, given that the majority of the growth occurred in high tax states, an employment growth-weighted 17 state average would increase the level of the average tax burden.

Finally, the evidence clearly demonstrates that high tech expansion is independent of the state and local tax burden. If anything, our survey indicated that high tax states, in general, have proved most favorable for expansion. This conclusion (that manufacturing employment expansion is independent of taxes) confirms the belief of most economists that taxes are not a critical factor in location decisions.[1]

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[1] See Bennett Harrison and Sandra Kanter, "The Political Economy of States' Job-Creation Business Incentives," Journal of the American Institute of Planners, Oct. 1978; and Roger W. Schmenner, "How Corporations Select Communities for New Manufacturing Plants," in The Economics of Firms Size, Market Structure, and Social Performance Proceedings of a Conference Sponsored by the Bureau of Economics, F. Edited by John J. Siegfried, Washington D.C.; U.S Government Printin Office, 1980.

(2) Increasing senior professional take-home pay by increasing salaries

While it appears there is no consistent relation between the personal tax burden and growth of electronics across states (and, by implication, a high personal tax burden cannot be said to impede the growth of high tech electronics), the High Tech Council and its supporters resolutely maintain that they know, from experience, that the high taxes in Massachusetts make the recruitment of senior professionals more difficult. The authors of the TMA report, which was commissioned by George Kariotis' (founder of Alpha Industries and a former MHTC member) Executive Office of Economic Affairs, interviewed company and independent recruiters on the difficulties of attracting senior engineers and other professionals. While noting that factors other than taxes may deter much-sought-after professionals from locating in Massachusetts, the report concludes:

> Personal taxes are a major recruiting obstacle in all cases and the obstacle in most cases.[1] (original emphasis)

The rapid expansion of electronics since 1976 has tightened the market for experienced, senior engineers. The heightened concern about the Massachusetts tax level reflects a concern about the level of take-home pay relative to other areas. Take-home pay (or disposable income) is equal to the paid salary minus taxes. Apparently, the salary levels offered by Massachusetts electronics firms to job candidates is not sufficient to compensate for the higher level of taxes in the

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[1] TMA, p. 83.

state. Firms are not paying sufficient salary premiums to offset high taxes. Instead, they want the state to lower taxes, thereby increasing take-home pay.

A survey conducted by the MHTC reported that member firms intend to hire 2773 senior engineers in 1981, 2465 in 1982, and 2548 with more than three years experience in 1983.[1] Thus, to facilitate hiring about 7800 experienced professionals over the next three years, the MHTC pushed a measure (Proposition 2½) which would lower taxes by about one-and-a-half billion dollars and affect all of 5.7 million people in the Commonwealth.

Could the firms themselves have paid a premium to offset high taxes? The TMA report recorded the view of one high tech executive on the question:

> . . . Well, if you don't care what you have to pay, you can almost always get the people you need. . . . You know what happens when you do that often enough? . . . I'll tell you-- you either drop your profit margins or you lose the business. . . . Sure, top talent is scarce but we have to pay an extra premium just to compensate for the goddam taxes in this state. . . . That's right . . . that's what "unfavorable business climate" is all about . . .[2]

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[1] Coopers & Lybrand, "Results of Survey on Human Resource Needs," Massachusetts High Technology Council, Inc., Jan. 1981, p. 11. The survey covered firms accounting for 85% of the Council's membership in terms of employment; thus, the projected new hires figures were inflated by 17.6 percent (100/85 - 1) to approximate the total new hires by all MHTC member firms.

[2] TMA, p. 84.

Instead of paying more, the MHTC firms want the state to cut expenditures and taxes more in order to hire an average of 2600 key people each year. Moreover, the Council wanted citizens and legislators to see the tax cutting as "people-oriented." When the "Social Contract" was announced, Ray Stata was reported as saying:

> You will note that we are not asking for relief on business taxes or any other benefits for our businesses per se.[1]

The financial performance of the larger HTC members who supported Proposition 2½ seems to indicate that, if higher salaries had been paid, the firms still would have had returns-on-equity (a major indicator of profitability) comparable to their competitors in other states. Indeed, Massachusetts electronics industries in general appear to be more profitable than their counterparts, on average, nationwide. One indication of this is based on data from the U.S. Department of Commerce's Census of Manufactures and Annual Survey of Manufactures. According to data for 1977, electronics workers in Massachusetts were 61 percent more productive than the average electronics employee in all other states. Each Massachusetts electronics worker was responsible for $20,000 in net value-added (after subtracting total labor compensation), compared to $12,400 for his/her counterpart in other states.[2]

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[1] "New Jobs Vowed if King Comes Through," Boston Globe, Feb. 9, 1979.

[2] Out of this residual (value-added minus total labor compensation), gross profits remain after net interest and administrative and advertising expenses are paid. The appropriate terms are defined as follows: Value-added: value of shipments minus costs of materials, fuel, electricity, and contract work. Total labor compensation: wages, salaries, legally required payments (e.g., unemployment compensation), and voluntary payments (e.g., pension contributions). Net value-added: value-added minus total labor compensation.
The electronics industries include: SIC industries 3573, 366, 367, 331, 382, and 383.
Sources: U.S. Department of Commerce, Bureau of the Census, 1977 Census of Manufactures, 1978 Annual Survey of Manufactures.

That electronics production is evidently more profitable in Massachusetts than in other states is also indicated by a comparison of 1980 corporate financial information for Massachusetts-based firms and their out-of-state competitors.[1]

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[1]Competing out-of-state firms were identified from corporate 10-K reports. (It should be noted that Massachusetts-based companies compete with each other as well.)

The following table compares two measures of financial performance for small samples of Massachusetts-based firms and out-of-state firms for 1980.

Table 11: Comparative Financial Performance, Electronics Firms, 1980.

| | avg. return on equity | avg. return on sales |
|---|---|---|
| 16 Massachusetts based firms | 22.3% | 3.5% |
| 10 out-of-state firms | 19.1 | 8.0 |

See Tables C-1 and C-2 in Appendix C

(While the average out-of-state firm in this group has sales five times as great as the firms in the Massachusetts sample, there seems to be no consistent relation between size, as measured by sales, and profitability.)

How would this relative performance be affected by salary premiums large enough to compensate senior engineers for the higher living costs in Massachusetts? The TMA study compared living costs (state and local taxes, transportation, and housing costs) for the family of a hypothetical senior engineer in likely residential areas for professionals employed in areas around the country with concentrations of electronics companies. The average total living costs for four Massachusetts localities is $19,334, compared with $16,953 for all the localities surveyed in 13 other states. This differential, $2381, is 6.4 percent of the hypothetical senior engineer's family income of $37,000.[1]

[1]Apparently the TMA study did not take into account the reduced federal income tax burden due to higher state and local taxes, thus, the Massachusetts differential over the average for the 13 other states would have been lower. TMA, pp. 89-102.

If the Massachusetts firms in our sample paid all of their senior engineers (not just newly hired ones) an additional $2381 to adjust for the higher Massachusetts cost of living, their salary costs would have been $7.5 million greater but, because of the 40.1 percent average, effective income tax rate, their combined net income would have been only $4.3 million lower. The average return-on-equity for these firms would have averaged 22.0 percent instead on 22.3 percent, still substantially above the 19.1 percent average return-on-equity for competing firms based in other states.[1]

Another way of gauging the ability of Massachusetts-based electronics firms to pay salary premiums to senior engineers is to look at the below-average wages paid to production and clerical workers in Massachusetts. If it is assumed that firms in Massachusetts and other states have the same level of total labor compensation for the same number of employees, Massachusetts firms could conceivably finance a differential (higher than the national average) to compensate for the higher Massachusetts cost of living.[2]

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[1] Estimated 1980 Massachusetts employment is 39,490 for these firms, 8 percent (3159) are senior engineers. To pay each of these 3159 an additional $2381 would add $7.5 million in salary costs. Pre-tax income would then be $466 million. Using average effective income tax rate of 40.1 percent, new net income tax is $187 million, and new net income is $279 million. New average return-on-equity becomes 22.0 percent.

[2] This exercise is not to necessarily advocate that this be done or that production and clerical wages be held down in the future to accomplish this; however, present production and clerical wages are well below national averages. And presumably, total labor (already) compensation in Massachusetts is below national averages.

Consider a computer or electronic components firm with one thousand employees[1], paying national average wages in one case and Massachusetts (or Boston metropolitan)average wages in the other. Average hourly production wages in the computer and electronic components industries are 6.7 percent less in Massachusetts than the average for the nation as a whole, and clerical pay levels in manufacturing for the Boston metropolitan area are 6 percent below the average for 262 SMSA's.[2] The following table presents the respective wage bills.

Table 12: Computer or Electronic Components Firm with 1,000 Employees.

| U.S. | # | Avg. hourly wage | Annual wage bill (2000 hours) |
|---|---|---|---|
| Production workers | 450 | $5.04 | $ 4,536 thousand |
| Clerical workers | 150 | 4.80 | 1,440 " |
| | | total | $ 5,976 thousand |
| Massachusetts | | | |
| Production workers | 450 | $4.70 | $ 4,230 thousand |
| Clerical workers | 150 | 4.51 | 1,353 " |
| | | total | $ 5,583 thousand |

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The production and clerical wage bill for the Massachusetts firm is $ 393 thousand less than the hypothetical U.S. counterpart. If there are 80 senior engineers (and other professionals) employed by this firm (8 percent of 1,000), this differential would fund a salary premium of $4,913 for each of the 80 senior professionals, an amount more than twice the $ 2381 Massachusetts cost of living differential.

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[1] Occupational employment weights used are those referred to earlier, see page 11. Production workers, 45 %; clericals, 15 %; senior engineers, 8 %.

(2) next page

footnote 2 from previous page:

Computer and elctronic industries production wages are weighted averages, respectively, for Massachusetts and U.S., i.e., number of production workers x average hourly ~~xxgx~~ earnings for each industry, this product summed across both computer and elctronic components industries and divided by total number of production workers in both industries. This procedure was followed for Massachusetts and the U.S. Source for production wages, 1977 Census of Manufactures. 1978 clerical worker pay level index (Boston metropolitan area 94 percent of average for 262 SMSA's), U.S. Bureau of Labor Statistics, Handbook of Labor Statistics, Dec. 1980.

(3) The Profit Impact of Proposition 2.5

If there is some basis for skepticism, as the above arguments suggest, regarding the HTC's stated position that Prop. 2.5 would facilitate attracting senior engineers to the state, what other reasons could there be for the Council's vigorous support of the measure? One possibility could be the impact on profitability. Is the effect of Prop. 2.5 on company profits great enough to explain the Council's interest in the tax-slashing effort?

The profit impact of Prop. 2.5 on MHTC firms can be approximated by considering (1) the increase in take-home pay for senior professional/administrative employees (due to the 15 percent residential property tax cut each year[1] and the reduction in the auto excise tax to 2.5 percent from 6.6 percent), in addition to (2) the firm's savings from having property taxes on its own property reduced. The rationale for considering the increased senior professional/administrative employee take-home pay as savings to the firm is that, as noted before, the firm could have achieved the same result by directly increasing the salaries it paid--but Prop. 2.5 "saved" the firm this money by lowering the personal tax burden. It is appropriate to include only the senior professional/administrative employee groups rather than all employees in the consideration of this increased take-home pay as "savings" because only these groups are effectively subject to a nation-wide labor market. Labor supply in the remaining occupational groups (entry-level engineers and other professionals, clerical and production workers) cannot reasonably be considered responsive to relative tax levels.

The following exercise approximates the profit savings by considering these two factors (increased senior professional/administrative employee take-home pay and corporate property tax savings) in relation to 1980 profits for the

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[1] Prop. 2.5 mandated a 15 percent reduction in property tax rates each year for communities with rates above 2.5 percent.

set of sixteen MHTC firms referred to earlier. These sixteen electronics firms all supported the pro-Prop. 2.5 campaign by contributing to the Council's Concerned Citizens for Limited Taxation organization. The estimated profit savings figures should be considered as no more than rough estimates; they are approximations made on the basis of incomplete information and informed guesses. Appendix D details the methodology utilized in arriving at the estimated profit savings.

Increase in Senior Professional/Administrative Employee Take-Home Pay

Assuming an $85,000 house, auto(s) valued at $5000 for tax purposes, and residence in one of the ten highest income Middlesex County communities, first year, Prop. 2.5-induced savings[1] for a senior professional/administrative employee is $639; second year savings is $1008; and in the third year, $1322.

Company Property Tax Reduction Benefit

Assuming $10,000 in property valuation per employee[2] and a location in one of the fifteeen eastern Massachusetts communities (in which the sample's MHTC firms have their main operations, but not considering Boston [Teradyne's location]), first year unadjusted[3] savings due to lower property tax rates on corporate property is $72.50 per Massachusetts employee.[4] Corresponding savings in the second and third years are $134.20 and $186.70 per employee, respectively.

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[1] This savings does not take into account the federal income tax deduction for state and local taxes.

[2] Property tax abatements and special Massachusetts income tax credits may apply.

[3] Any increase in corporate income would be subject to state and federal corporate income taxes. In the next section of the exercise, when the total Prop. 2.5 induced profit savings are computed, the average effective 1980 income tax rate for these sixteen firms will be applied to arrive at the net increase in corporate profits resulting from Prop. 2.5.

[4] All employees, not just senior professional/administrative.

Combined Profit Savings from Prop. 2.5

After applying a 40 percent effective income tax rate to the combined pre-tax savings, on a per-Massachusetts employee basis[1] the Prop. 2.5 related profit savings amounts to approximately $94 per employee in the first year, $159 in the second, and $215 in the third year. Considering that these sixteen MHTC firms had approximately 39.5 thousand Massachusetts employees in 1980, the total net profit savings for these firms comes to $3.7 million in the first year of Prop. 2.5, $6.3 million in the second year, and $8.5 million in the third year.

In relation to their total net income (from worldwide operations) for corporate fiscal year 1980 of $283.1 million, these savings, respectively, represent 1.3 percent, 2.2 percent, and 3.0 percent of 1980 profits. For companies whose profits have typically increased 20-60 percent per year in the late 70's, increases of this magnitude truly seem very marginal at best. If Prop. 2.5 had been in effect in fiscal year 1980, the increased net profit of $3.7 million for these sixteen firms would have boosted their average return-on-equity by only three-tenths of one percent, from 22.3 percent to 22.6 percent--expanding their pre-2.5 differential return-on-equity over a sample of ten competing out-of-state electronics firms by only ten percent.[2]

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[1] Applying the increased take-home pay to 13 percent of Massachusetts employment, 8 percent senior professional and 5 percent administrative.

[2] On the other hand, considered narrowly as an "investment", the financial contribution of $131 thousand to Prop. 2.5 made by these sixteen firms would yield an average annual ~~xxtxx~~ rate-of-return of 4700 percent for the first three years.

4) Proposition 2.5 as a Deterrent to Economic Growth

The case that Prop. 2.5 (and the wholesale tax reduction approach in general) is an inappropriate instrument to address the true concerns of the state's burgeoning high technology industries is not limited to observations that Prop. 2.5 will neither have much of a positive impact, if any, on the ease of attracting experienced senior professionals, or on the profitability of its HTC sponsors. Beyond that, certain provisions of Prop. 2.5 operate to restrict high tech expansion in the state and, in general, the measure throws the process of state and local government into disarray thoughtful action by the legislature and municipal governments. Considering These additional, negative effects, seriously call into question the MHTC firms' ability to serve as responsible advocates of rational public policy proposals.

The Council ostensibly supported 2.5 in order to enhance the state's ability to attract key professionals and expand operations within the state. New industrial development requires infrastructure (sewer and water lines, roads) and public services (police and fire protection, and expanded schools if the development increases the localities' population.) Prop. 2.5, however, puts very tight restrictions on the ability of municipalities to increase the tax base for funding the expanded services and building the infrastructure to accomodate industrial expansion. Under 2.5, once the local property tax rate is reduced to 2.5 percent, the total amount of tax levy can only increase by 2.5 percent (in nominal, not inflation-adjusted terms) over the previous year's total levy. This makes it impossible for localities to even maintain existing services and functions[1], let alone

[1] With a ten percent inflation rate per year, real spending levels would have to decline by a minimum of 7.5 percent a year.

expanding them to facilitate new industrial development.

In a letter sent to its member mayors, the Massachusetts Municipal Association cautioned:

> The realities of Proposition 2½ may lead to a reassessment of the advisability of promoting any new developments at this time.[1]

The MHTC apparently did not consider this restrictive aspect of Prop. 2.5 in its quest for immediate public policy changes. State Economic Affairs Secretary, George Kariotis, the King administration's close link to the high tech community, indicated as much. According to the Globe, Kariotis said this anti-development effect was an "after-the-fact" consideration

On other occassions, as well, Kariotis has observed that Proposition 2½, the process leading to its passage, and the climate of opinion created in its wake, defeat what the MHTC set out to achiev

When the legislature's Joint Committee on Taxation opened its spring 1981 hearings to consider amendments to Prop. 2.5, Kariotis expressed his discomfort with the post-2.5 atmosphere. The Globe reported that Kariotis felt the MHTC had " 'conned themselves and conned the people' into believing that substantial property tax cuts would be achieved throughout the commonwealth."[3] The former high tech executive went on to say:

> There isn't a private corporation around that could cut its cash by 25 percent to 30 percent and expect to survive.[4]

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[1] "Some 2.5 Backers are Thinking it All Over," Boston Globe, Feb. 23, 1981.

[2] Ibid.

[3] "Changes Proposed for Prop. 2.5," Boston Globe, March 13, 1981.

[4] Ibid.

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its wake, are ill-suited to accomplishing what the MHTC set out to achieve. When the legislature's Joint Committee on Taxation opened its spring 1981 hearings to consider amendments to Prop. 2.5, Kariotis expressed his discomfort with the post-2.5 atmosphere. The Globe reported that Kariotis felt the MHTC had " 'conned themselves and conned the people' into believing that substantial property tax cuts would be achieved throughout the commonwealth."[3] The former high tech executive went on to say:

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[2] Ibid.

[3] "Changes Proposed for Prop. 2.5," Boston Globe, March 13, 1981.

[4] Ibid.

Around this same time, Kariotis was reported to have said, in effect, that until the state and Massachusetts municipalities decide how to resolve the turmoil generated by Prop. 2.5, the state "will retain its label of 'Taxachusetts' and business will continue to have trouble recruiting skilled workers."[1] Kariotis concluded:

> I think 2.5 is a disaster. We're going to put 12,000 to 15,000 teachers, good people all, out on the street and it will take years to retrain them. The biggest irony is that it's not going to provide tax relief in the towns where these high tech engineers will live, Weston, Lincoln, Wellesley.[2]

Political stability is an essential precondition for productive economic investment to take place and to reasonably benefit society's members. Although certainly no one would contend that Prop. 2.5 is solely responsible for the disarray pervading the governance processes in Massachusetts in 1981, few would deny that the principal contributing element has been Prop. 2.5 In an editorial assessment of Governor King and his de facto embrace of Prop. 2.5, the Boston Globe remarked:

> Massachusetts is gaining another kind of reputation among those who might want to live or invest here, a reputation for chaos.[3]

These observations certainly seem to reinforce the view that success in business does not necessarily imply a corresponding adeptness when it comes to good sense in the field of public policy.

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[1] "High Tech Making it in Massachusetts," Boston Globe, March 10, 1981.

[2] Ibid.

[3] "The Business of Massachusetts," Boston Globe, June 1, 1981.

(C) Overzealous in reprioritizing the public sector.

Thus far the focus of the MHTC towards taxation has been drawn out and discussed in detail. The Council's machinations in the arena of public higher education (PHE), discussed briefly in Part II, represents the main thrust of the other side of the MHTC's agenda -- that state government tailor its manpower, education, and economic development policies to the industry's needs. While the tax agenda has apparently been the preoccupation of a minority, the latter area reflects the broader concerns of the high tech community.

The secure hold, by virtue of George Kariotis' position in the King Administration, that high tech interests have in the Department of Manpower Development has already been described. In the area of PHE, two further points warrant consideration.

The creation of the Dover Project previous to the formation of the MHTC was clearly a move by Digital to have the state subsidize a large part of its own training expenses. As a member of the state college system put it in 1979:

> Digital spent about $50 million two years ago on education for its employees. They didn't believe they oughtto pay that.[1]

Many argued at the time that the reorganization of the state college system under the auspices of the Dover Project was simply an adjustment to changing times. However, it should be noted that the state-of-the-art computer science curriculum was designed specifically to serve Digital's manpower needs.

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[1] "The Dover Project," Sprinfield Union, Dec. 24, 1979, p. 13

This curriculum, referred to as the "Digital Model," was designed so "that state college graduates will be trained the way Ditital needs them, and the student won't have to have more training before they get a job with Digital."[1] Finally, advocates of the project had claimed that the program would be self-supporting; a recent state audit showed expenses running three times greater than revenues.[2]

Once the MHTC was formed, and with the election of Governor King, an industry-wide approach to the reorganization of PHE emerged. In the words of the Council:

> The Council has actively worked with state educational, legislative, and administrative officials to influence state policies on the allocation of public funds for higher education, and it has obtained commitments from those officials to support the needs of the high technology industry more aggressively.[3]

Throughout its four years, the efficiency-minded Dukakis administration had considered a general reorganization of PHE. Yet the lack of a clear focus, and more importantly, a politically powerful advocate, kept the idea on the drawing board. Both came to the fore in 1979. Elements of a plan were articulated in the Kariotis-sponsored TMA report. Whether or not the proposals were well thought out was immaterial in the bullish climate which ensued the announcement of the "Social Contract."[4] The Council's urgings helped the formation of a legislative commission in early 1980 to develop

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[1] ibid., p. 24

[2] "College computer center funding criticized," Boston Globe, Dec. 4, 1980

[3] MHTC, Progress Report 1980, p. 13

[4] One observer noted: "It is foolhardy and short-sighted to restructure any institution, least of all colleges and universities, on the basis of fads and passing fashions, or questionable data. One hopes that high technology firms plan their own operations on methods that are more trustworthy than those they have employed on behalf of urging the reshaping of higher education." B.Laurie, "Monitoring High Tech," The Massachusetts Teacher, April 1980 p. 24.

a plan for reorganization. This commission, which included Ray Stata, was supposed to have taken two full years to develop its recommendations. Anxious to move ahead, the Council urged its legislative friends to short-cut the process; and a reorganization was effected in the spring of 1980, by means of an outside section in the fiscal 1981 state budget.[1] King happily signed the bill into law.

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[1]A number of the political circumstances surrounding the reorganization should be highlighted. The author of the move was House Ways and Means Chairman John Finnegan. About a year later, Finnegan's brother, Joseph M. Finnegan, was named to the $49,000 a year vice chancellor position with the Board of Regents. He replaced Seon Cho, who left to take a job with Wang Laboratories, whose head, An Wang, is a member of the Board of Regents.

The state's outgoing Secretary of Educational Affairs, Charles E.M. Johnson, attacked King in July 1980 for going along with the reorganization plan, and accused him of using the process for "patronage and political payoffs." Chief Secretary for the King administration, Paul Guzzi, called the charges "absurd," while Kariotis responded with - "Oh my God, Jesus, He's flipped." Johnson specifically charged that the job of Chancellor would probably go to Guzzi. Guzzi denied he had any interest in the $54,000 a year job. Guzzi took the position, on an acting basis, shortly thereafter, only to leave in February of 1981 to join Wang Laboratories.

The man who took Guzzi's position on a permanent basis was John Duff. Duff, who as the president of the University of Lowell also sat on the board of the Wang Institute, worked with Wang on urban development in Lowell. Duff's attorney for collective bargaining negotiations since August 1981 is Charles Mahoney, who until then had served as the Human Services Secretary for the King Administration.

In addition to its aggressive activities in the areas of public higher education and state training programs, MHTC member firms have not been averse to helping themselves to generous shares of other government-funded programs as well. Wang Labs, one of the fastest growing of the medium-sized high tech firms in the country (with average annual compounded increases in sales and profits of 67 percent and 70 percent, respectively, over the period 1976-80[1]), has repeatedly taken advantage of federal Urban Development Action Grants and Economic Development Administration funds to help finance its expansions in Boston's Chinatown section, Lowell, and Holyoke.[2]

de Castro's firm, Data General, helped itself to a variety of government incentives in planning a field engineering support and administrative center in Milford, Massachusetts. Government subsidies which Data General will be receiving for the establishment of facilities requiring up to 1200 employees, include: (1) $750,000 allocated by the town of Milford for street improvements, sewer and water line installation, and the purchase of land; (2) state approval of a 121A tax agreement to lessen property taxes paid to the town; and (3) state approval for tax exempt industrial revenue bond (IRB) financing.[3]

Numerous MHTC member firms have availed themselves of some of the roughly $660 million in tax-exempt revenue bonds approved by the Massachusetts Industrial Finance Agency (MIFA) in 1979 and 1980, including: Wang, Foxboro, Microfab, Adams-Russell, LTX, Computervision, Data Terminal,

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[1] Wang Labs, 1980 Annual Report.

[2] "High Tech Good for Real Estate," Boston Globe, February 1, 1981; "Reagan Budget Cuts May Cost Hub $50M," Boston Herald-American, March 11, 1981; "Wang Labs UDAG Fund Approved," Springfield Daily News, July 1, 1981.

[3] "Milford Paved the Way for Data General," Boston Globe, Aug. 16, 1981.

M/A COM, and Augat. An interesting case is Alpha Industries' nearly one million dollar tax-exempt IRB, approved in early 1980 by MIFA. State Executive Secretary of Economic Affairs Kariotis, a founder of Alpha, sits on the boards of not only Alpha but MIFA as well.[1]

At the same time the Council has publicized its approach to tax issues as "people-oriented," it has advocated state legislation permitting a three percent tax credit on the increase in research-and-development expenditures above the average of the three previous years. For rapidly growing firms with similarly expanding R-and-D budgets, such a provision would be very lucrative. If such a bill had been applicable in 1980, five of the sixteen MHTC firms referred to in earlier sections would have saved $2.66 million on their Massachusetts taxes, or 1.5 percent of their 1980 profits.[2,3]

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[1] MIFA, 1979 Annual Report; MIFA, "Projects MIFA has Approved to be Issued by Local Authorities," n.d.; "MIFA has Surpassed All-Time Laon Record," Industry, Feb., 1980; Massachusetts Department of Commerce and Development, "Report on Business Expansions in the Commonwealth of Massachusetts, 1980."

[2] Firms included: Computervision, Data General, GCA, Prime Computer, and Wang.

[3] The R&D tax credit provision of the federal tax cut package signed into law in August, 1981, allows a 25 percent credit against taxes applied to the increase in R&D expenditures over the average of the three previous years. Since such federal corporate income tax provisions also apply in computing Massachusetts corporate income taxes, if this credit had been applicable in 1980, these five firms would have saved $22.2 million on their Massachusetts taxes, or 12.7 percent of their 1980 profits.

Given past experience with such targeted tax incentive measures, the state should be wary of potential abuses of such provisions in addition to being concerned with the potential revenue loss. For example, a 1973 Employment Opportunity Incentive law provided for a $500 tax credit to manufacturing and R&D firms hiring people off public assistance or unemployment compensation and for those put through company-sponsored training and rehabilitation programs. A state government study, which contributed to the failure to renew the legislation in 1978, discovered that Digital Equipment claimed $700 thousand in credits in 1977 for putting over 1000 existing employees through a training program lasting an average of 1.85 weeks.[4]

[4] Michael Segal, "Does the High Tech Industry Really Deserve More Tax Relief," Boston Herald-American, March 21, 1980.

## CONCLUSION

The critical support of the MHTC for Proposition 2½ is but the tip of an iceberg. This act represented the nexus of two separate developments in Massachusetts: (1) the growing inequity of the state and local tax burden; and (2) the rising political influence of the state's electronics industry. On the one hand, while the High Tech Council was not responsible for the tax situation, its actions are indicative of the traditional power and influence exercised by the business community in Massachusetts. On the other hand, the Council has sought to use the role of the high tech industry as an increasingly important sector of the state's economy to bargain for major political concessions, especially in the area of tax policy.

The MHTC's approach to tax issues, as we have demonstrated, neither represents a strong common interest of the high tech industry, nor is it reflective of the needs of the state as a whole. Furthermore, the claims made by the Council have been based on a questionable assessment of industry needs and are not supported by the evidence.

As we have seen in the last part, the MHTC's approach to taxation issues is dubious. This approach, representative of only a minority of the industry, misrepresents and misunderstands the ability of fiscal changes to enhance economic growth. This can be seen on a number of accounts: (1) high tax burdens have not been a factor in deterring recent growth in electronics

employment throughout the U.S.; (2) based on the relatively low wages paid to non-professional workers in the Massachusetts electronics industry, and the relatively high labor productivity and profitability of Massachusetts firms, the state's high tech industry could clearly afford to make up differentials, if needed, between states in take-home pay for key professional employees; (3) given the small, although not insignificant, profit savings accruing to high tech firms, versus the massive impact on the state's fiscal system, the Council's support for Proposition 2½ is entirely out of proportion; and (4) the fact that Prop. 2½ is a deterrent to economic growth suggests that support for the measure was ill-conceived even with regard to the requirements of high tech firms.

But a larger issue looms, which can only be touched upon here. The notion that tax reduction schemes are an unrealistic panacea in economic development policy is but a small part of it. Certainly, throwing tax cuts at a perceived shortage of experienced engineers cannot be counted on to contribute to new employment. The presence of a sizeable community of highly trained professional and technical workers and their supporting workforce (and the public and private institutions fostering their productive employment) is an asset of which Massachusetts is justly proud. There is a danger, however, that these human resources will become over-specialized and/or utilized too narrowly in the pursuit of individual corporate goals. Economic development policy, especially

for a state which has experienced the rise and fall of major industrial sectors in the past, should ensure the adaptability of the workforce while at the same time enhancing the skills necessary for short-term productive employment.

Close attention must be paid to the limitations of orienting state policy exclusively toward one industry. While the electronics sector is of considerable importance to Massachusetts, it is not the only major sector providing employment within the state. The transition from mill-based industry to high technology and service industries has left other structural problems which should be addressed as well.

The legislature should not lose sight of broader economic goals. It is necessary to consider both the relationship of the MHTC program to the broader needs of the state's high technology industries, and also the relationship of a prosperous high tech sector to the economic requirements of the state's population in general. The necessity for this latter concern is perhaps best indicated by the vote for Proposition 2½ itself. Although the high tech sector enjoyed an unparalled boom from 1976-79, the benefits of its prosperity were not shared widely enough so as to materially offset the declining living standards experienced by most of the state's population.

Massachusetts needs to continue exporting high technology manufactured goods and services in order to pay for its food and energy imports. A technologically progressive industrial base

should be encouraged. Such assistance, however, should be formulated in a manner which suits the interests of the Commonwealth. This requires a thorough evaluation of current and prospective developments in the high tech electronics industry, including its labor force requirements. It is unquestionably legitimate for there to be an ongoing government role in the development of the electronics sector. After all, the high tech industry in Massachusetts is itself an outgrowth of a generation of government military and space-related subsidization.

The current recession in electronics shows that the industry is not immune to business cycle fluctuations. The acquisition of three sizeable Massachusetts high tech firms within a span of three months in the fall of 1981 indicates the volatility of the industry's structure as well. State policy should also recognize such matters as the growing penetration of U.S. markets by Japanese electronics firms, and the increased use of electronics-based production equipment in manufacturing, which may displace workers in other sectors in the state's economy.

As we have seen, the MHTC has been quick to present carefully tailored public policy positions supported by selective evidence. This study indicates the pressing need for broader input in the formulation of economic development policies, particularly those related to the high tech electronics industry.

# APPENDIX A

## TABLE A-1

Per Capita State and Local Expenditures, 1976-79: Comparison of Massachusetts and U.S., Total Expenditures and Selected Budget Expenditure Items.

| | Mass. | U.S. Average | Difference |
|---|---|---|---|
| Direct General Expenditure | $ 1677.1 | $1481.3 | + $196.4 |
| Public Welfare | 273.9 | 183.6 | 90.3 |
| Fire | 49.4 | 23.4 | 26.0 |
| Interest on Debt | 133.6 | 59.0 | 74.6 |
| Other* General Expenditure | 200.4 | 73.4 | 127.0 |
| Employee Retirement | 82.9 | 55.8 | 27.1 |

*Excludes Capital Outlay, Education, Libraries, Health and Hospitals, Transportation, Police, Corrections, Sewerage, Housing, Parks, Government Administation, and Other Insurance payments.

Sources: compiled from Governmental Finances 1978-79, U.S. Burea of the Census, 1980.

TABLE A-2

Property Taxes as a Percent of Family Income, Owner Occupied Single Family Homes, 1971.

| Family Income | U.S Total | Northeast Region |
|---|---|---|
| under $2,000 | 16.6% | 30.8% |
| 2,000-2,999 | 9.7 | 15.7 |
| 3,000-3,999 | 7.7 | 13.1 |
| 4,000-4,999 | 6.4 | 9.8 |
| 5,000-5,999 | 5.5 | 9.3 |
| 6,000-6,999 | 4.7 | 7.1 |
| 7,000-9,999 | 4.2 | 6.2 |
| 10,000-14,999 | 3.7 | 5.3 |
| 15,000-24,999 | 3.3 | 4.6 |
| 25,000 and over | 2.9 | 3.9 |
| All Incomes | 4.9 | 6.9 |

(Source: U.S. Bureau of the Census, "Residential Finance Survey, 1970," conducted in 1971)

TABLE A-3

Property Taxes as a Percent of Family Income for Largest City in Massachusetts, 1976

| Family Income | % of Personal Income |
|---|---|
| 7,500 | 10.3 |
| 10,000 | 9.1 |
| 15,000 | 8.0 |
| 17,500 | 7.6 |
| 25,000 | 6.8 |
| 50,000 | 5.7 |

(Source: "Interstate Comparisons of Family Tax Burdens...", Stephen Lile, Western Kentucky University, June 30, 1978, cited by Torto/ O'Malley, p.43)

## APPENDIX B

### Financial Contributions to the Pro--Proposition 2½ Effort

Source: Massachusetts Office of Campaign and Political Finance (OCPF)
8 Beacon Street, Boston, Massachusetts

Three committees filed with the OCPF as supporting Pro. 2½ (Question 2) on the ballot in November, 1980.

1. Brockton Committee for 2½
2. Citizens for Limited Taxation Referendum Committee (CLT)
3. Concerned Citizens for Lower Taxes (CCLT), an affiliate of the Massachusetts High Technology Council (MHTC)

Table B-1

Total Pro-2½ Funds, by Committee

| committee | gross receipts | net receipts |
|---|---|---|
| Brockton | $ 3,614 | $ 3,614 |
| CLT | 152,936 | 152,936 |
| CCLT | 271,985 | |
| (less $20,000 loan from MHTC) | | |
| (less $31,500 from CLT) | | 220,485 |
| Total | $428,535 | $377,035 |

Table B-2

Summary Data on Total Pro-2½ Funds

| | | |
|---|---|---|
| Total net receipts[1] | $377,035 | 100.0% |
| MHTC member contributions | 229,200 | 60.8% |
| Total CCLT net receipts + MHTC contributions to CLT | 243,085 | 64.5% |
| Auto Dealers (identifiable as such, with contributions $100+) | 15,000 | 4.0% |
| Size distribution, all contributions | $377,035 | 100.0% |
| less than $100[2] | 75,000 | 19.9% |
| $100--$999 | 56,135 | 14.9% |
| $1000 + | 245,900 | 65.2% |

[1] Net of loans and without double counting CLT contribution to CCLT.

[2] Includes all Brockton committee receipts.

Table B-3

MHTC Member Pro-2½ Contributions

| company | contributions |
|---|---|
| Data General | $16,000 |
| Foxboro | 14,400 |
| GenRad | 12,000 |
| Millipore | 12,000 |
| Prime Computer | 12,000 |
| Teradyne | 12,000 |
| Computervision | 12,000 |
| New England Nuclear | 8,300 |
| Augat | 8,000 |
| Data Terminal | 8,000 |
| GCA | 8,000 |
| Unitrode | 8,000 |
| Wang | 7,000 |
| Metal Bellows | 7,000 |
| Adams-Russell | 5,400 |
| GTE | 5,000 |
| BBN | 5,000 |
| Corning Medical | 5,000 |
| Ionics | 5,000 |
| Frequency Sources | 5,000 |
| Hewlett-Packard | 3,000 |
| Sprague Electric | 3,000 |
| Aritech | 3,000 |
| Dynamics Research | 3,000 |
| Alpha Industries | 3,000 |
| Total these 25 MHTC firms | $190,100 |
| 35 other MHTC firms | 39,100 |
| TOTAL 60 MHTC firms | $229,200 |

# APPENDIX C

## TABLE C-1

## SELECTED MASSACHUSETTS--BASED ELECTRONICS COMPANIES,[1] FINANCIAL PERFORMANCE, 1980

| company | sales | net income | avg. equity[2] | return on avg. equity | return on sales |
|---|---|---|---|---|---|
| | ($ amounts in millions) | | | (percent) | |
| Adams-Russell | $ 36.1 | $ 2.7 | $ 15.5 | 17.4 | 7.5 |
| Alpha Industries | 21.8 | 1.9 | 7.1 | 26.2 | 8.7 |
| Analog Devices | 135.7 | 9.4 | 41.4 | 22.7 | 6.9 |
| Applicon | 50.8 | 3.1 | 4.5 | 68.9 | 6.1 |
| Augat | 157.3 | 18.0 | 74.8 | 24.1 | 11.4 |
| Computervision | 224.2 | 23.3 | 74.6 | 31.2 | 10.4 |
| Data Terminal | 107.2 | 9.5 | 40.5 | 23.5 | 8.9 |
| Data General | 653.9 | 54.7 | 285.1 | 19.2 | 8.4 |
| Foxboro | 509.1 | 32.1 | 271.4 | 11.8 | 6.3 |
| GCA | 170.1 | 13.1 | 47.6 | 27.5 | 7.7 |
| GenRad | 167.7 | 11.1 | 58.2 | 19.1 | 6.6 |
| Prime Computer | 267.6 | 31.2 | 71.7 | 43.5 | 11.7 |
| Semicon | 23.2 | 1.2 | 3.4 | 36.2 | 5.2 |
| Teradyne | 165.0 | 11.4 | 75.8 | 15.0 | 6.9 |
| Unitrode | 81.6 | 8.3 | 41.0 | 20.2 | 10.2 |
| Wang Labs | 543.3 | 52.1 | 154.9 | 33.6 | 9.6 |
| 16-Company Total | $3314.6 | $283.1 | $1267.5 | ---- | ---- |
| 16-Company Average | ----- | --- | ---- | 22.3 | 8.5 |

[1] All Massachusetts High Technology Council members, and contributors to the pro-Proposition 2½ campaign (see Appendix B.)

[2] Average equity = (end-of-current year equity + end-of-previous year equity) divided by 2

Source: 1980 Annual Reports.

TABLE C-2

SELECTED OUT-OF-STATE ELECTRONICS COMPANIES[1]

FINANCIAL PERFORMANCE, 1980

| company | sales | net income | avg. equity[2] | return on avg. equity | return on sales |
|---|---|---|---|---|---|
| | ($ amounts in millions) | | | (percent) | |
| AMP | $1155.4 | $131.3 | $ 529.5 | 24.8 | 11.4 |
| Beckman | 549.3 | 36.6 | 229.4 | 16.0 | 6.7 |
| Datapoint | 318.8 | 33.5 | 148.8 | 22.5 | 10.5 |
| Four-Phase | 197.2 | 5.5 | 99.5 | 5.5 | 2.8 |
| General Signal | 1521.7 | 104.2 | 618.9 | 16.8 | 6.8 |
| Hewlett-Packard | 3099.0 | 269.0 | 1391.0 | 19.3 | 8.7 |
| Lanier | 253.2 | 17.4 | 66.7 | 26.1 | 6.9 |
| Perkin-Elmer | 996.2 | 68.2 | 331.7 | 20.6 | 6.8 |
| Tektronix | 971.3 | 85.1 | 443.1 | 19.2 | 8.8 |
| Varian | 620.9 | 22.1 | 184.2 | 12.0 | 3.6 |
| 10-Company Total | $9683.0 | $772.9 | $4042.8 | ---- | ---- |
| 10-Company Average | ------ | ----- | ----- | 19.1 | 8.0 |

[1]Non-Massachusetts-based firms which compete in same product markets with the 16 Massachusetts-based firms in Table C-1. Competing firms determined from corporate 10-K reports.

[2]Average equity, see Table C-1.

Source: 1980 Annual Reports.

# APPENDIX D

## Proposition 2½--Induced Profit Savings to a Sample of Sixteen Massachusetts High Tech Council Firms

1. Increase in Take-Home Pay for Senior Professional/Administrative Employees (SP/AE)

Assuming an $85,000 house, auto(s) valued at $5000 for tax purposes, and residence in one of the ten highest income Middlesex County communities.

(a) Derivation of average property tax rate

| town/city | 1980 actual tax rate[1] | assessment ratio |
|---|---|---|
| Acton | 29.40 | 1.00 |
| Belmont | 67.00 | .56 |
| Carlisle | 25.00 | 1.00 |
| Concord | 35.20 | .97 |
| Lexington | 87.40 | .40 |
| Lincoln | 19.60 | 1.00 |
| Sherborn | 37.00 | 1.00 |
| Sudbury | 57.50 | .63 |
| Wayland | 44.60 | .86 |
| Weston | 48.50 | .65 |
| average | 42.18 | .807 |

1980 full value tax rate: (42.18)(.807) = 34.04

with 1st year 15% decrease, full value tax rate= 29.93
" 2nd " " " " " " " = 24.59
" 3rd " " " " " " " = 20.90

(b) Property tax savings for each SP/AE

1st year savings = $5.11/$1000 valuation; for $85,000: $ 434
2nd " " = $9.45/$1000 " " " : 803
3rd " " =$13.14/$1000 " " " : $1117

(c) Savings from reduction in auto excise tax rate

For $5000 valuation, pre-2½ tax at $66/$1000: $ 330
" " " post-2½ " " $25/$1000: $ 125

Savings each year of $ 205

(d) Total increase in take-home pay for SP/AE

1st year, 434 + 205 = $ 639
2nd " , 803 + 205 = 1008
3rd " ,1117 + 205 = 1322

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[1] Massachusetts Taxpayers Foundation, "Municipal Financial Data, including 1980 Tax Rates."

2. Company Property Tax Reduction Benefit

Assuming $10,000 in property valuation per employee and a location in one of fifteen eastern Massachusetts communities (in which the sample of 16 MHTC firms [see Appendix C] have their main operations; but not considering Boston [Teradyne's location.])

(a) Derivation of average property tax rate

| town/city | 1980 actual tax rate | assessment ratio |
|---|---|---|
| Attleboro | 72.35 | .59 |
| Bedford--2[1] | 95.00 | .36 |
| Burlington--2[1] | 69.00 | .59 |
| Concord | 35.20 | .97 |
| Foxboro | 73.30 | .49 |
| Framingham | 67.00 | .64 |
| Lowell | 180.80 | .29 |
| Maynard | 46.87 | .48 |
| Norwood | 48.00 | .76 |
| Southboro | 29.00 | 1.00 |
| Waltham | 63.00 | .66 |
| Watertown | 224.00 | .23 |
| Woburn | 40.20 | 1.00 |
| average | 80.50 | .60 |

1980 full value tax rate: (80.50) (.60) = 48.38

with 1st year 15% decrease, full value tax rate = 41.13
" 2nd " " " " " " " = 34.96
" 3rd " " " " " " " = 29.71

(b) Property tax savings for firms, per employee

| | | | |
|---|---|---|---|
| 1st year savings | = $7.25/1000 | valuation; for $10,000 | : $ 72.50 |
| 2nd " " | = 13.42/1000 | " " " | : 134.20 |
| 3rd " " | = 18.67/1000 | " " " | : 186.70 |

3. Combined Proposition 2½--Related Profit Savings, Per Employee

(a) Pre-income tax profit savings[2]

Since SP/AE constitute only 13% of average firm's employment, SP/AE increase in take-home pay multiplied 0.13 to get per-employee savings to the firm

| | SP/AE | | Firm | |
|---|---|---|---|---|
| 1st year: | (.13) (639) | + | (72.50) | = $ 156 |
| 2nd " : | " (1008) | + | (134.20) | = $ 265 |
| 3rd " : | " (1322) | + | (186.70) | = $ 359 |

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[1] Counted twice; main location for two of the firms in the sample.

[2] i.e., before considering the effect of the effective income tax rate applied to the increased pre-tax income.

(b) After-income tax profit savings

Since any increase in income is subject to effective income tax (federal and state); pre-tax savings are reduced by 40% to represent the increased income taxes.[1]

1st year after-tax profit savings: 156 - 156(.4) = $ 94
2nd " " " " " : 265 - 265(.4) = $159
3rd " " " " " : 359 - 359(.4) = $215

These are after-tax profit savings, per all employees.

4. Total After-Tax Profit Savings to Sample of 16 MHTC Firms

(a) Massachusetts employment and contributions to Prop. 2½

| company | Mass. employment[2] | Prop.2½ contributions[3] |
|---|---|---|
| Adams-Russell | 600 | $5400 |
| Alpha Industries | 480 | 3000 |
| Analog Devices | 2400 | 2000 |
| Applicon | 750 | 1000 |
| Augat | 2000 | 8000 |
| Computervision | 1500 | 12000 |
| Data Terminal | 1100 | 8000 |
| Data General | 5000 | 16000 |
| Foxboro | 6500 | 14400 |
| GCA | 1900 | 8000 |
| GenRad | 2400 | 12000 |
| Prime Computer | 2100 | 12000 |
| Semicon | 560 | 2150 |
| Teradyne | 1700 | 12000 |
| Unitrode | 1500 | 8000 |
| Wang Labs | 9000 | 7000 |
| Total | 39490 | $130950 |

(b) Total after-tax profit savings for 16 MHTC firms, and relative to 1980 net profits

| | year 1st | 2nd | 3rd |
|---|---|---|---|
| After-tax profit savings, per employee | $ 94 | $159 | $215 |
| Total Massachusetts employment | ----39,490----- | | |
| Total after-tax profit savings(millions) | 3.7 | 6.3 | 8.5 |
| Total, as % of 1980 net profits of $283.1 million[4] | 1.3% | 2.2% | 3.0% |

[1]For the 16 sample firms, the 1980 effective income tax rate averaged 40 percent.

[2]Estimated 1980 Massachusetts employment.

[3]Massachusetts Office of Campaign and Political Finance, see Appendix B.

[4]See Table C-1, Appendix C.